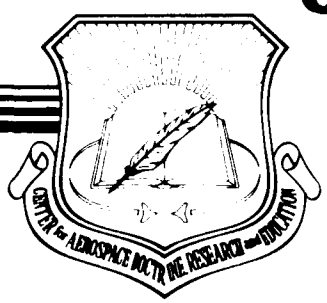
# Tactical Air Support of Ground Forces in the Future




Harold T. Gonzales, Lt Col, USAF

Cut along dotted line

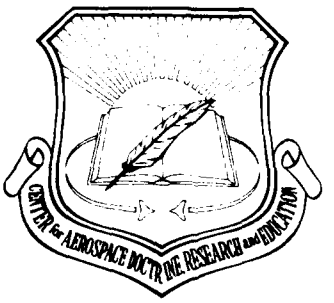
**After you have read the research report, please give us your frank opinion on the contents. All comments—large or small, complimentary or caustic—will be gratefully appreciated. Mail them to: CADRE/RI, Building 1400, Maxwell AFB AL 36112-5532.**

# Tactical Air Support of Ground Forces in the Future

**Gonzales**



**Thank you for your assistance**




Research Report No. AU-ARI-89-7

# Tactical Air Support of Ground Forces in the Future

*by*

**HAROLD T. GONZALES, JR., Lt Col, USAF**
*Research Fellow*
Airpower Research Institute

**Air University Press**
**Maxwell Air Force Base, Alabama 36112-5532**

May 1990

## DISCLAIMER

This publication was produced in the Department of Defense school environment in the interest of academic freedom and the advancement of national defense-related concepts. The views expressed in this publication are those of the author and do not reflect the official policy or position of the Department of Defense or the United States government.

This publication has not been reviewed by security and policy review authorities and is not cleared for public release. It is the property of the United States government and is not to be reproduced in whole or in part without permission of the commander, AUCADRE, Maxwell Air Force Base, Alabama.

*In Memory of Jay, Dick O., Roy, Bill, Bullet, Dick A., Ted, Dick, Mike, Larry, Dale, Brad, and Wolfgang.*

*"They're not really dead, they've merely flown West, final debrief they'll be there with the rest."*

*From a Juvat Boys Choir Song*
*"American Fighter Pilots"*
*Written by Capt Scott Hefren*
*Kunsan Air Base, Republic of Korea*
*July 1982*

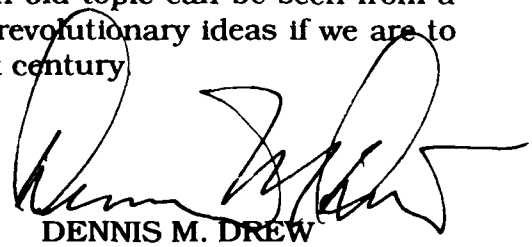
*To Maureen, Harold III, Caitlin, and all the Gonzales and Fitzpatrick clans.*

# Contents

# *Foreword*

Lt Col Harold T. Gonzales, Jr., has examined the evolution of tactical air support doctrine from the early World War I experiences through the Vietnam conflict. He examines not only how the doctrine evolved, but also how many of the emotional issues associated with close air support have arisen. His recommendation that both Army and Air Force leaders focus more on the *what* of support for ground forces and less on the *how* is sound.

While some of Colonel Gonzales's recommendations are controversial, his underlying thesis is correct. We must continue to look at old issues from different perspectives if we are to find new answers to these problems. This work jogs the mind and illustrates that an old topic can be seen from a unique angle. The Air Force needs these revolutionary ideas if we are to continue to meet the challenges of the next century.



DENNIS M. DREW
Colonel, USAF
Director, Airpower Research Institute

# *About the Author*

Lt Col Harold T. Gonzales, Jr.

Lt Col Harold T. ("Gonzo") Gonzales, Jr., is a native of New Orleans, Louisiana. He attended Tulane University on a four-year Air Force ROTC financial assistance grant and graduated in 1972 with a bachelor of science degree in psychology. He was also designated as an ROTC distinguished graduate. He immediately entered active duty and attended undergraduate pilot training (UPT) at Craig Air Force Base (AFB), Alabama. After graduation from UPT, he remained at Craig AFB as an instructor pilot in the T-37 basic jet trainer. During this time, he attended Troy State University, earning a master of science degree in guidance and counseling. In 1976 he was transferred to Shaw AFB, South Carolina, as an instructor pilot and forward air controller (FAC) in the O-2 Skymaster. He also attended the basic military parachutist course, earning his airborne wings in 1977. In 1980 he was reassigned to Hill AFB, Utah, where he was a member of the initial operational cadre in the F-16 Fighting Falcon, flying with the 4th Tactical Fighter Squadron (TFS). His next assignment was a one-year remote tour with the 8th Tactical Fighter Wing (TFW) at Kunsan Air Base (AB), Republic of Korea, where he again flew the F-16 and served as the wing chief of life support. In 1983 he returned from Kunsan AB to the 388th TFW at Hill AFB for his third operational tour in the F-16. He served as a flight commander and the wing chief of safety. For his fourth F-16 tour, he was transferred to MacDill AFB, Florida, as a replacement training unit instructor pilot and served as a flight commander in the 72d Tactical Fighter Training Squadron (TFTS) and as the 56th Tactical Training Wing (TTW) assistant chief of standardization and evaluation. He also earned a master of aeronautical science degree from Embry-Riddle Aeronautical University, Daytona Beach, Florida. Colonel Gonzales was selected in 1988 to be the Tactical Air Command research fellow at the Airpower Research Institute,

Air University Center for Aerospace Doctrine, Research, and Education, Maxwell AFB, Alabama. He was also a member of the Air War College class of 1989. He is currently on another tour flying the F-16 with the 363d TFW, Shaw AFB. Colonel Gonzales, his wife Maureen, their son Harold III, and their daughter Caitlin currently live in Sumter, South Carolina.

# *Preface*

Almost one year ago, I was sitting in my office at MacDill AFB, Florida, when I got a call from the Consolidated Base Personnel Office investigating my interest in being a research fellow at Maxwell AFB. Thinking aloud, I asked: what is a research fellow? From across the hall came the deputy commander for operations of the 56th Tactical Training Wing, Col Casmier ("Cash") Jaszczak, bellowing, "You want to do that!" And so I did. For that personal guidance I wish to thank Colonel "J" for setting me on the path to Maxwell and this project; it has been a unique opportunity.

Serving as a Tactical Air Command-sponsored research (CSR) fellow to the Airpower Research Institute (ARI), Air University Center for Aerospace Doctrine, Research, and Education (AUCADRE), has been a great opportunity. It has been a unique experience. Attempting to thank all the people who helped in this project involves the risk of forgetting someone, so up front I wish to thank anyone I may forget in these acknowledgments.

First, I wish to thank my team at AUCADRE: Dr Stanley E. Spangler, Maj Earl H. ("Butch") Tilford, Jr., and Hugh Richardson. To say I could not have done it without them sounds trite, but is deeply and sincerely true. I would also like to thank Col Dennis M. Drew, Lt Col Price T. Bingham, Maj Charles ("Westy") A. Westenhoff, and Dr David MacIsaac, who listened to my screwy ideas and tested my logic. Thanks also to my fellow CSRs for keeping me sane knowing other people were in the same boat. Finally, a special note of thanks to Lt Col Manfred ("Manny") Koczur, chief of the ARI Command Research Division, who has the special personality it takes to do his job.

Next, I wish to thank members of the "real" Air Force for their support—at Headquarters US Air Force, Lt Col Dick White (HQ USAF/XOXWD), Washington, D.C.; at Headquarters Tactical Air Command, Langley AFB, Virginia, Brig Gen Mike Ryan (HQ TAC/XP); my boss, Col Ron Daskovitch, and Lt Col Mike Fore (HQ TAC/XPJ), Lt Col Wayne Williamson (HQ TAC/XPD), and Maj Bill Cope (4525 CAS).

At the Air War College, I wish to thank the members of Seminar 11 (first mix), especially Col Doug Cairns and Bill Snyder, and Seminar 10 (second mix), especially Col Kent Harbaugh, Col Lew Simons, and Dr Bart Michelson. Other instructors deserving mention are Dr Joe Strange and Dr Jim Mowbray. And finally, a fellow student who taught me much about the Battle of the Bulge, Lt Col Roger Carter.

Last, but not least, thanks to my family members for their unfailing support and devotion throughout this task. This may be the one time that a fighter pilot can express his love and devotion for his family and have it published so it can be read and appreciated through the years. So, to my

loving wife Maureen, son Harold III, and my little daughter Caitlin, and to the rest of the Gonzales and Fitzpatrick families, all my love and deepest thanks for all you have endured through the years—especially during this year. This work is dedicated to all of them and in memory of friends who have gone before.

HAROLD T. GONZALES, JR., Lt Col, USAF
Research Fellow
Airpower Research Institute

# *Introduction*

In an open letter to the field, Gen Robert D. Russ, commander of Tactical Air Command (TAC), made the following statement: "Tactical aviators have two primary jobs—to provide air defense for the North American continent and support the Army in achieving its battlefield objectives."[1] To many people, this statement means the tactical air forces (TAF) plan to conduct close air support (CAS) because close air support is the only way that the Air Force supports the Army. Then, after they think for a moment, they are disturbed because the Air Force does not like to perform CAS and airplanes are not good CAS platforms. Suddenly the discussion moves from the logical to the emotional. Therein lies much of the present problem with the arguments conducted in both political and military circles over air support for the Army.

To illustrate the emotional nature of this controversy, let us examine the myth and reality of close air support. In his column in the *Washington Times* on 20 December 1988, Gary Anderson made the following accusation:

> In an attempt at self-defense, the Army created its own mini-air force to do the things the Air Corps wouldn't. Shortly after the war [World War II], the new U.S. Air Force ruthlessly used its massive political strength to ensure that the Army would never again have a fixed-wing aviation capability. *Since that time the Army has never received the close air support it needs and deserves* [emphasis added].[2]

Now let us contrast this statement with a study conducted by Brig Gen Douglas Kinnard. General Kinnard questioned Army general officers on their satisfaction with the tactical air support provided by the Air Force in Vietnam. Some 60 percent of the Army general officers who responded to Kinnard's inquiry rated Air Force cooperation as "outstanding," while only 2 percent called it "unsatisfactory." Air strikes were widely regarded as valuable, but this sentiment was tinged by a substantial opinion that they were "not vital."[3] Who is correct?

These comments illustrate the emotional problems associated with describing the Air Force's support for the Army. A major portion of this debate is deep seated in the American psyche. As historian Russell F. Weigley delineates in *The American Way of War:*

> The attractiveness of air power to Americans—even in its extreme or ideal forms—stems largely from its compatibility with deep-seated national tendencies or ideal forms. . . . Americans have persistently seen themselves as outnumbered. . . . In their desire to offset this perceived sense of numerical inferiority, US leaders have developed an intense reliance on firepower and technology.[4]

Our fascination with technology has resulted in a search for a technological panacea that will replace the loss of lives in warfare. As Brig Gen E. M.

Lynch states in his article "Close Air Support: Its Failed Form and Its Failing Function":

> We have seen increased reliance on technology alone to perfect our means. And we have seen increased emphasis on specialization to accelerate the process. In other words, the system has failed to attack our problems with the analytical mind of an architect. For the *means* we seek to perfect are on the *form* side of the ledger. While the *goals* we have confused so often involve *functions* critical to our survival.[5]

Simply stated, technology drives the question of *how* to do things, but what has been forgotten is *what* that technology was intended to accomplish.

This study will attempt to establish the architecture for answering the question, What is air support for ground forces? Chapter 1 investigates what aircraft contribute to the combat equation and what historically they have contributed to the campaign plans of the commander. Chapter 2 explores the evolution of modern tactical air force doctrine. Starting with World War I, it traces the evolution of TAC doctrine through the 1920s and 1930s to its culmination in World War II. Chapter 3 then analyzes present TAC doctrine against the historical lessons of chapter 2.

Chapter 4 provides an evaluation of the post-World War II pressures that have molded present TAC doctrine. It addresses the political realities that have moved the uses of fighters away from the lessons of war. Chapter 5 addresses the evolution of joint Army/Air Force doctrine concerning the issues of *what* is necessary for joint victory in battle.

Chapter 6 synthesizes the conclusions of this study into an architecture upon which future TAF doctrine can be framed. It also provides a mirror against which we can evaluate the logic of future doctrine.

**Notes**

1. Gen Robert D. Russ, USAF, "Open Letter to the Field," *AirLand Bulletin* 81-1, TAC-TRADOC ALFA (31 March 1988): 7.
2. Gary Anderson, "A Dinosaur with Wings?" *Washington Times*, 20 December 1988, F-4.
3. Brig Gen Douglas Kinnard, USA, Retired, *The War Managers* (Hanover, N.H.: University Press of New England, 1977), 48, 63.
4. Russell F. Weigley, *The American Way of War: A History of United States Military Strategy and Policy* (New York: Macmillan Publishing Co., Inc., 1973).
5. Brig Gen E. M. Lynch, USA, Retired, "Close Air Support: Its Failed Form and Its Failing Function," *Armed Forces Journal International*, August 1986, 72.

## Chapter 1

# AirLand Battle: Operational Art, Maneuver, and Firepower

Field Manual (FM) 100-5, *Operations*, of 1976 vintage stated that the US defense of the North Atlantic Treaty Organization (NATO) was based on a doctrine of active defense, which relied on NATO firepower concentrated at the point of a main Warsaw Pact attack. Maneuver available to NATO forces was essentially lateral and limited due to the requirement to defend as far forward as possible in the Federal Republic of Germany.

The active defense was the work of Gen William E. DePuy, the first commander of the US Army's Training and Doctrine Command (TRADOC). Active defense was based on the lethality of the modern battlefield as demonstrated by the Arab-Israeli war of 1973 (the Yom Kippur War), which had cost both the Arabs and Israelis over 50 percent of their forces in the short span of only two weeks. It was also a response to the dramatic increase in Warsaw Pact forces during the 1970s.

In his article entitled "AirLand Battle: The Historical Background," John L. Romjue states that US Army doctrinal analysts reevaluated the Army's fighting doctrine. Firepower became the primary emphasis of the doctrine published in 1976 in FM 100-5. The analysts "also emphasized the strength of the defense—an *active defense* using maneuver to concentrate at the right time and place to defeat the powerful armor thrusts of the numerically superior armies of the Warsaw Pact."[1]

Active defense focused on the combat that would occur at the forward edge of the battle area (FEBA). The force structure to implement active defense was the Army's Reorganization Objective Army Divisions (ROAD). Because of the belief in the lethality of modern weapons, active defense focused on the employment of divisions and brigades deployed on key defensive terrain. Because of the lack of faith in the ability to maneuver, it placed little emphasis on operational maneuver or corps-level operations. The only opportunity for offensive operations was the counterattack. As Maj Jonathan B. A. Bailey, British Royal Artillery, points out in his book *Field Artillery and Firepower:*

> Dissatisfaction with Active Defense was based chiefly on the fear that, in a sudden attack by a massive echeloned enemy, defenses would be overwhelmed before they could inflict decisive damage. NATO was planning a war of attrition in which the attacker held the advantage and initiative. Enemy mobility and firepower needed to

be matched by dispersion in depth, or early use of nuclear weapons; but the former was prohibited for political reasons, and the latter looked increasingly unattractive.[2]

In 1982 the US Army introduced a new how-to-fight doctrine in response to the weaknesses of active defense. Known as AirLand Battle, this new doctrine reemphasizes maneuver as a requirement for victory at the operational and tactical levels of war. FM 100-5, *Operations*, of 1982 stressed that maneuver is inseparable from firepower, "the enabling, violent, destructive force essential to successful maneuver."[3] Maneuver enables numerically outnumbered forces to concentrate at the correct time and place to defeat the enemy by attaining local superiority through concentration at the point of battle. To accomplish these objectives, the Army has returned to some historical concepts dating back to the time of Napoléon.

AirLand Battle institutes operational art as a level of war—the operational level. Operational art is "the employment of military forces to attain strategic goals in a theater of war or theater of operations through the design, organization, and conduct of campaigns and major operations."[4] This operational level of war serves a vital function. It serves as the link between national objectives (the strategic level of war) and the execution of battle (tactical level of war). It is at the operational and tactical levels of war that combat power is generated.

Combat power is a crucial requirement for attaining victory. In generating combat power, commanders must convert the potential of their resources into actual combat capability by assembling those forces at the decisive time and place. "Superior combat power is generated through a commander's skillful combination of the elements of maneuver, firepower, protection, and leadership in a sound plan flexibly but forcefully executed."[5]

The concept of combat power contains two critical elements: maneuver and firepower. Maneuver is the dynamic element of combat. Through maneuver, forces are positioned in such a way as to achieve an advantage over the enemy's force disposition. This advantage may be surprise, shock, physical momentum, or a combination of these elements. The essence of maneuver is to concentrate combat power at the critical time and place so that numerically inferior forces can defeat larger ones.

Once forces have been maneuvered and concentrated at the decisive time and place, the ability to mass firepower becomes critical. Firepower provides the destructive force that can defeat the enemy's ability and will to fight. Firepower contributes to the generation of combat power in two ways. In the traditional view, firepower is thought of as an independent entity that delays or destroys the combat power of the enemy. The second dimension to firepower is its relationship with maneuver. "Firepower facilitates maneuver by suppressing the enemy's fires and disrupting the movement of his forces."[6]

As operational art, maneuver and firepower are closely related. Firepower can be used to disrupt the enemy by destroying or damaging the enemy's forces or key facilities. Firepower complicates the enemy's command and control by creating delays in his movement. Firepower also reduces the

enemy's firepower by degrading his artillery, air defense, and air support. Ground forces utilize both maneuver and firepower to generate combat power.

The name "AirLand Battle" was given to this doctrine by Gen Donn A. Starry, commander of TRADOC from 1977 to 1981. AirLand Battle captured the essence of General Starry's vision of combat power and how it would be generated. "He envisioned not only the interaction occurring between the Air Force and the Army but also that occurring between all air and ground assets in a firepower and maneuver context."[7]

Historically, ground forces have been identified with their ability to use maneuver and firepower. The primary maneuver arms of the modern battlefield are infantry and armor. These combat arms develop firepower only to enable them to maneuver better. In contrast to maneuver arms, artillery is the ground unit primarily associated with the generation of firepower. Artillery must maneuver to get within range to apply firepower or to avoid detection so it can survive. Major Bailey points out that success in war depends on combining both maneuver and firepower.[8]

In order to understand how to integrate tactical air forces into the AirLand Battle, there is an essential question that must be answered: Do airplanes provide firepower, maneuver, or both? To answer this question, we must understand the historical roles of two combat arms: artillery and cavalry.

## Air Power: Flying Artillery or Modern Cavalry?

Artillery, historically known as the Army's "King of Battle," has been the ground commander's primary firepower delivery system. The effectiveness of artillery is tied to the quality of the guns and the ammunition that they fire. In reality, ammunition is the real weapon and the artillery tube serves as the launch vehicle. In addition, the mobility of the gun determines its utility in reaching firing positions from which to engage the enemy. Major Bailey further expounds on the capability and limitations of artillery:

> The characteristics of the guns or rockets themselves determine the weight of fire that can be delivered: their range and ability to shoot into enemy territory across a front; their inherent accuracy; their caliber, which partly determines the size and variety of rounds fired; their rate of fire, which restricts the weight of munitions delivered over a period of time; and their degree of reliability, which regulates this further.[9]

Because modern artillery is usually delivered in an indirect fire mode, the accuracy and effectiveness of artillery is also dependent on target acquisition systems that must deliver accurate target coordinates and timely correction of the fires if they are not precisely on target. Depending on how precisely these functions are accomplished, artillery will have the following effects on the enemy:

> Artillery fire has four effects on an enemy: firstly the "neutralizing effect," by which he is prevented from moving, observing, or manning his equipment; secondly the "material effect," the destruction of equipment; thirdly the "lethal effect," the physical

destruction of enemy personnel; and fourthly the "morale effect," the shock or process of demoralization that results among troops under fire. This may render them unable to use their weapons, even though no physical damage or injury has occurred, and weaken their resolve to do so, even if they are physically able.[10]

The reputation of artillery as the "King of Battle" is well deserved by the historical lethality of this weapon:

From the middle of the eighteenth century to the middle of the nineteenth, artillery is judged to have accounted for perhaps 50 percent of battlefield casualties. In the sixty years preceding 1914, this figure was probably as low as 10 percent. The remaining 90 percent fell to small arms, whose range and accuracy had come to rival that of artillery. . . . It was not until the First World War, which was mostly static, [against] soft infantry targets that artillery was transformed through the use of indirect fire, improved target acquisition, $C^3$, and heavy equipments and munitions. This primacy was reflected in the relative allocation of manpower to artillery and the accounting by artillery for more than half the casualties inflicted in that war. . . . In the Second World War, artillery still played a major role; but to some extent, the mobility and protection of targets overtook the ability of artillery to acquire and destroy them with concentrated, indirect, high explosive (HE) shellfire.[11]

On the eastern front, the Soviet army's experience in World War II was somewhat more intense than that of the Western Allies. "In WW II, 51% of the casualties sustained by the Red Army were caused by artillery. On the other side it is estimated that Soviet artillery inflicted some 70% of material and personnel losses on the German Army."[12] In the protracted land war on the eastern front, the Soviets maintained 33 percent of their forces in their artillery units, which delivered a lethal punch. Indeed, artillery is lethal, but the central question of this discussion is, Should airplanes be considered flying artillery?

Historically, the linkage between aircraft and artillery has always been close. One of the first uses of airplanes in combat was reconnaissance. The airplanes were used to find targets for the artillery to attack. Again, Major Bailey's book has some interesting observations:

The relationship between artillery and air forces had two aspects. Firstly, artillery relied upon aircraft for the acquisition of deep targets, and the control of fire beyond the sight of ground observers; and secondly, aircraft were expected to provide "aerial artillery" to acquire and engage deep targets, which artillery could not locate or hit with accuracy.[13]

Thus, from its earliest uses, the aircraft was tied to artillery and performed in the close and deep battle. Indeed, aircraft were seen as the only way to attack enemy formations beyond the range of conventional indirect fire guns. Though aircraft and artillery are connected in the delivery of fire, there are definite differences in *what* aircraft do to deliver firepower.

Artillery, in the indirect fire mode, must maneuver to a point where the target is within range of the gun. A separate entity (ground observer or aircraft) maneuvers to within visual range of the target in order to correct the fire of the artillery. Once the artillery round is fired, there is no defense against it. Artillery can be engaged by counterbattery fire, but through maneuver, the battery can relocate to survive. Artillery fires in a straight

line from the gun to the target—the gun-target line. Using indirect fire, artillery can fire over trees and hills but is limited in capability against targets located on the reverse slope of terrain.

Aircraft have different capabilities and limitations. In order to deliver ordnance on a target, the aircraft must maneuver into a position from which the weapon can reach the target, that is, within bomb range. The aircraft must physically penetrate the enemy's territory, thus providing the enemy an opportunity to defend against this intrusion. The aircraft can attack from any direction and, though not restricted to the gun-target line, is limited by bomb range. Also, in the terminal phase of attack, the aircraft must aim the weapon, which severely limits maneuver. Other limitations of the aircraft as an attack platform are described by Maj Gen J. F. C. Fuller in his book *Machine Warfare*:

> In my opinion these enthusiasts were so carried away by the [aviation] revolution that they overlooked the fact that every machine is possessed of limitations as well as powers. The most prominent of these was inherent in the very idea of the airplane itself. It was built to fight gravity by velocity, and in consequence *can only function when in motion*. . . . All [aircraft] in varying degrees are influenced by the two great limiting factors, gravity and landing grounds, whereas the fighting types possess the following limitations:
>
> (1) Low volume of fire. [The aircraft's ammunition supply is limited by its lifting power and the distance to be flown.]
>
> (2) Lack of direct protection in the air. [Space being free from material objects, protection is indirect—clouds, height, and speed.]
>
> (3) Inaccuracy of aimed fire. [This limitation has been greatly reduced since 1943.]
>
> (4) Inability to occupy. [The general inability to occupy a position in strength rules out the airplane as a conquering machine.]
>
> (5) Excessive wastage. [This limitation prohibits an indefinite increase in the number of machines used.][14]

To understand the integration of aircraft into a ground commander's scheme of maneuver, we must use a model that includes not just firepower but also maneuver. Is there a historical example that incorporates both firepower and the ability to penetrate deeply into enemy territory? Let us look at cavalry as such an example.

Maj Gen I. B. Holley, Jr., in his article "Of Saber Charges, Escort Fighters, and Spacecraft: The Search for Doctrine," describes the traditional roles of cavalry:

> By the end of the Napoleonic era, there were four rather clearly defined functions of cavalry: *the charge*, galloping knee to knee, boot to boot, with lance or saber in shock actions akin to modern armor; *reconnaissance*, where horsemen served as the eyes of the army, probing out ahead of the main force to locate the enemy; *screening*, where small elements of rapidly moving horsemen could cover exposed flanks and serve as a trip wire against surprise moves by the enemy; and *strategic cavalry*, where large forces of horsemen deliberately avoided the enemy's main forces and penetrated deeply into his rear areas to disrupt his communications, burn his bridges, destroy his supply dumps and production centers, while at the same time dislocating enemy plans and calculations.[15]

Military history is filled with the gallant exploits of cavalry. The frontal assault is probably the most romanticized action that cavalry performed. Not wishing to be cut to pieces, however, infantry developed defensive formations to counter cavalry tactics. One of the most famous of these actions occurred during the Battle of Waterloo in 1815:

> When the French left off their infantry attacks and switched to cavalry, the British infantry formed in square, a formation which, as it presented a hedge of bayonets on all sides, and made a fire defense in any direction possible, was quite formidable to horsemen. . . . At moments the action assumed an air of general bafflement and fatigue, the men in the squares merely maintaining their hedge of points while the French cavalrymen, carrying swords or lances, rode between them, uncertain what to do next.[16]

As the firepower of infantry and artillery increased, cavalry became less and less capable of accomplishing the frontal assault with reasonable losses and concentrated more on its other three roles. Cavalry could still accomplish these missions due to its approximate three-to-one speed advantage over the foot soldier and also due to the "inferior qualities of the muzzleloading musket with its slow fire and short range."[17]

During the American Civil War, cavalry excelled in its strategic role and independent operations. These missions were not only successful in damage inflicted on the enemy but were excellent economy-of-force actions because of the enemy forces employed to intercept the cavalry force. One such raid was conducted in 1863 by Col Benjamin Henry Grierson of the Union army. His cavalry force of three regiments numbering 1,700 men raided from La Grange, Tennessee, through the state of Mississippi to Baton Rouge, Louisiana. Grierson's raid covered 600 miles and concentrated on cutting railway and telegraph lines, effectively isolating Jackson, the state capital. "Grierson's raid effectively disrupted Confederate communications and diverted their attention from the river crossing which Grant was preparing."[18]

The magnitude of the damage inflicted by this daring and deep penetration of the Confederacy was equally impressive:

> Combining speed, boldness, and cunning, Grierson's troopers swept through the entire state of Mississippi during the last two weeks of April. They won several skirmishes, killed or wounded a hundred rebels, and captured five hundred at a cost of two dozen casualties. They tore up fifty miles of three different railroads supplying [Confederate general John C.] Pemberton's army, burned scores of freight cars and depots, and finally rode exhausted into Union lines at Baton Rouge after sixteen days and six hundred miles of marauding. They had lured most of Pemberton's depleted cavalry plus a full division into futile pursuit.[19]

Unquestionably, cavalry maneuvered to apply its limited firepower and carried the war into the enemy's home territory. Unlike armor and infantry, which use firepower to facilitate maneuver, cavalry used speed to avoid contact and bypass enemy positions. Unlike artillery, which moved to achieve range or to survive, cavalry used speed of maneuver to reach within the enemy's lines of communication and then to destroy and disrupt those lines of communication by taking the battle deep into enemy territory.

Part of the problem in understanding the linkage between cavalry and airplanes stems from the unique history of cavalry in the US Army. Cavalry was mounted infantry, not saber-wielding shock troops. "The charge failed, and the cavalrymen dropped off their horses and used their carbines as they should have; because the post-revolution cavalryman was a mounted infantryman, a horseman who used his mount to get to the fighting, then got down and shot it out from ground cover."[20]

It seems apparent that *what* airplanes contribute as operational art is more consistent with cavalry actions than with artillery. Airplanes must avoid threat concentrations and physically penetrate enemy lines to attack targets. When used in the conventional close-support role, airplanes are conducting a violent frontal assault into the teeth of the enemy's air defenses much like the old cavalry charge. As operational art, airplanes serve more like cavalry than artillery. Why, then, has air support for ground forces historically and emotionally been identified with flying artillery? General Holley gives keen insight into the development of early Army Air Corps doctrine on this matter:

> How *should* the airplane be exploited? A good case could be made for visualizing aircraft as the logical successor of the horse. The speed differential the airplane enjoyed over infantrymen would enable it to perform many traditional cavalry missions to great advantage. The ability to fly over obstacles and avoid enemy blocking forces on the ground held high promise of performing the deep penetration, independent strategic mission into the enemy's heartland, a mission already well defined doctrinally by the cavalry. But the horsemen would have none of it.[21]

Does this historical fact continue to block our ability to integrate land and air forces even today? Has an initial failure to understand that airplanes, like cavalry, must maneuver to support the ground commander with their firepower caused a fundamental flaw in our entire thinking on *what* support for ground forces entails? Historians have focused on the destructive power of airplanes and not on the more complex requirement to couple maneuver with firepower. For this reason, airplanes, like artillery tubes, have been delegated in the minds of both air and ground commanders to the servicing of targets and not to the role of facilitating maneuver by ground forces. Can this primacy of airplanes as firepower support be identified in today's doctrinal thinking on how to conduct battle?

## Flying Artillery: A Doctrinal Linkage

FM 100-5, *Operations*, states that "the principle fire support element in fire and maneuver is the field artillery."[22] Commanders exercise overall direction of the fire support system. They use their command and control network to mass fires against area targets or to direct fires against point targets. Fire support must be integrated with the unit's scheme of maneuver and its surveillance and target-acquisition efforts. FM 100-5 addresses the importance of integrated fire support:

> In integrating fire support into operations, the most important considerations are adequacy, flexibility, and continuity. In offensive operations, the main attack gets the priority of fire while long-range systems strike defenses in depth, enemy reserves, or targets such as command posts, bridges, and defiles. In the defense, a broader balance of fire support is necessary, but the main effort is still allocated stronger fire support. Priority of support should change automatically when the commander shifts his main effort. . . . When maneuver forces have missions such as raids, deep attacks, or covering force operations, which take them beyond supporting distance of the main body, commanders must make special provision for their support.[23]

It is important to remember that certain units get priority of fire support due to the importance of their mission, and fire support assets are allocated against these mission priorities. In the offensive, the priority falls to the units conducting the main attack. In World War II, the Germans called this the *Schwerpunkt*, meaning the center of gravity or point of main effort. A second concept borrowed from the German army is *Auftragstaktik*, meaning the ability of forces to shift with the situation and respond independently "within the commander's intent to a change in the tactical situation."[24]

Major Bailey has identified some potential problems with AirLand Battle's ability to provide this flexible fire support:

> It leads the USA towards a high-technology battlefield necessarily managed by computers, and yet it recognizes the likelihood that communications may collapse. . . . AirLand Battle was said to be founded on the German principles of *Auftragstaktik*, *Schwerpunkt* and *Aufrollen* [turning or rolling up the enemy's front or flank], which rely upon individual initiative at all levels in a mobile battle, yet the US Army is trying at the same time to create a battlefield in which the control of firepower and other resources is managed automatically. There is an uneasy duality of management and leadership. Either would certainly be needed if the other failed, but it is not certain how successful the two would be able to act in concert.[25]

Not only are Army resources managed through an allocation system but so also are its tactical air assets. TACM 2-1, *Tactical Air Operations*, addresses force allotment in terms of the mobility, flexibility, and responsiveness of tactical air forces which allow them to perform multiple, diverse combat tasks. "Since there will rarely be sufficient resources to meet all demands, the problem becomes one of dividing up resources so that they do the most good."[26]

Clearly, both field artillery and tactical air assets are doctrinally tied to their ability to provide firepower. In this context, the method of allocation of these resources is a simple numbers game. Is it possible to adopt another more beneficial perspective in order to integrate tactical air assets into the ground commander's scheme of maneuver?

Perhaps by understanding tactical air power not simply as fire support but as an independent maneuver element—as very high-speed cavalry, for example—we can get a different perspective on *what* airplanes do as operational art. To accomplish this task, let us explore maneuver warfare in a different historical context. Let us see if we can analyze the lessons of history from the perspective of airplanes as cavalry, not flying artillery. To

accomplish this task, let us first explore offensive operations in maneuver warfare as operational art.

Before discussing the role of tactical air forces in maneuver warfare, a short lesson in maneuver warfare is appropriate. In *Maneuver in War*, Lt Col Charles Willoughby states simply that the plan of maneuver is the synthesis of direction and the distribution of forces. "In analyzing possible combinations and the conditions governing their use, they are examined in three general situations: (1) Offensive against an enemy in position; (2) Offensive against an enemy in movement; (3) Defensive."[27]

FM 100-5 goes into greater detail on the nature of offensive operations, describing the characteristics of offensive operations, phases of offensive operations, and the forms of maneuver. Offensive operations are characterized by surprise, concentration, speed, flexibility, and audacity. Offensive operations are further divided by phases of the operation identified as preparation, attack, exploitation, and pursuit. By their nature, offensive operations can be classified as envelopment, turning movement, infiltration, penetration, and frontal attack.

Because of this interdependence, offensive concepts must be incorporated into an offensive framework to achieve success. This framework includes a main attack (the *Schwerpunkt*) and supporting attacks, reserve operations in support of the attack, a reconnaissance and security operation forward and to the flanks and rear of the main and supporting attacks, a continuous deep operation in vital parts of the zone of attack, and finally rear area operations necessary to maintain offensive momentum. It is quite apparent that much is happening within the commander's scheme of maneuver and attack; and the integration of both artillery and aircraft into this framework increases the complexity exponentially. As previously stated, aircraft and artillery are traditionally integrated as fire support. Let us explore a different perspective: airplanes as an independent maneuver element integrated into the scheme of maneuver of offensive operations rather than the traditional method of integration only into the fire support plan.

## Tactical Air Forces: Cavalry of the Modern Battlefield

To understand the concept this study is attempting to use, let us first examine a relatively simple form of offensive maneuver—the infiltration. FM 100-5 defines infiltration as the reaching of the enemy's rear without fighting through prepared defenses. Historically, this type of operation was conducted by cavalry, such as the Grierson raid during the Civil War. As Grierson demonstrated, successful infiltration requires above all the avoidance of detection and engagement. Have airplanes ever conducted infiltration operations? Look at the case of air infiltration conducted by the

German air force during German blitzkrieg operations in France during World War II:

> In the 1940 offensive in France, one of the first problems confronting the Germans was how to cross the Meuse River with three divisions opposed by three French divisions dug in on the opposite bank. An attack by *Stuka* dive bombers offered the key. But the question arose as to whether one massive strike, as was consistent with *Luftwaffe* doctrine, would do, or a continuous attack would be carried out, as requested by the ground commander, General [Heinz] Guderian. Guderian explained that he needed to keep the enemy down while he made his initial crossings. A single attack would not accomplish this end. The air force then agreed to provide him a stream of *Stukas*. The air attack took place. Three divisions crossed the river to overwhelm three divisions and a breakthrough was under way.[28]

To attribute the success of this operation merely to firepower is to misunderstand *what* the Stukas accomplished. These airplanes maneuvered across the river in a continuous stream and established a presence for a required period of time. They constituted an independent maneuver element, responding to the scheme of operations of General Guderian by providing a deep presence that tied down the enemy's main force. *How* the Stukas tied down the enemy was firepower, but *what* the Stukas provided General Guderian was a maneuver element that could infiltrate the French lines and tie down enemy forces while the main body crossed the Meuse River. To understand this battle at the operational level of war, the simple answer of fire support does not adequately describe *what* the German air forces contributed to the battle.

Let us turn to another form of offensive maneuver—the penetration. A penetration is used when the enemy flanks are not assailable and when time does not permit some other form of maneuver. The penetration attempts to rupture enemy defenses on a narrow front and thereby create assailable internal flanks and access to the enemy's rear. The operations conducted by the Allied tactical air forces to allow the breakout from the Normandy beachhead demonstrates the value of airplanes to conduct a penetration maneuver that can be exploited by ground forces.

Air operations immediately after D-day presented an excellent example of both failure and success of air forces as an independent maneuver element conducting a penetration. It also offers a chance to contrast the firepower provided by field artillery and aircraft.

On 22 June 1944 the Allied forces attempted to break out of the Normandy beachhead toward Cherbourg:

> A massive bombing assault, including all available fighter-bombers, was launched against German fortifications and entrenched troops defending Cherbourg. The air attacks went off moderately well and shook up the defending forces considerably. . . . The principle of employing fighter-bombers to cooperate with a large scale ground effort was sound; however, their employment in strafing and bombing area targets in a close-cooperation operation without a medium of on-the-spot ground control and without specific knowledge of their objective was considered one of the few significant misapplications of tactical air power in the entire career of the Ninth Air Force in the European Theater of Operations.[29]

Though ultimately successful, this operation did not demoralize the enemy as desired because of the hardness of the enemy defenses. Unlike a true penetration that would create assailable flanks, the Cherbourg operation allowed the Germans to emerge from the rubble and put up a strong defense. In addition, the costs to the fighter-bombers ran high, with 25 lost in the operation. This action did serve to identify weaknesses in the integration of air into breakout operations. These lessons would bring success during a second attempt to penetrate the German defenses—Operation Totalize, which occurred one month later:

> At 11:30 P.M. on 7 August [1944], the assault forces crossed the start-line, led by navigating tanks and flails. They rumbled forward, in four columns of four vehicles abreast, into a great dust cloud raised by the bombing. Bomber Command had done its job. . . . There were no casualties and 3,462 tons of bombs had fallen on the villages in the path of the attack. There was no preliminary artillery bombardment. . . . German counter-attacks were repulsed, and 2nd TAF's Typhoons were out in strength. . . . Flying sweeps over German approach roads. . . . Despite collisions and navigation errors, the early objectives had fallen by first light.[30]

It is important to note that it was the penetration of the air forces that caused the disorganization of the enemy, not the destruction of the enemy forces per se. Actual inspection of the battlefield by the Canadian army's operational research teams revealed that only 10 tank kills could be directly attributed to air action.[31] Airplanes did not destroy the enemy. Instead, they created a breach, thus giving ground forces an opportunity to maneuver and exploit that breach. Artillery fire could not have done this.

> Operation TOTALIZE also permitted comparison of the effects of artillery fire and air bombardment. One objective was taken with artillery support then others with air support, but bombing certainly delivered far greater weight of fire at greater range more suddenly. The lessons of the First World War were remembered insofar as neither was judged solely by its physical effect, but also took into account effect on morale. In the case of airborne bombardment, this was judged to be greater, lasting one hour, after which the enemy would probably have recovered. . . . In the case of artillery, the morale effect was judged to last two minutes.[32]

It was this demoralization of the enemy's will that the ground forces exploited during the penetration. Airplanes served as the independent maneuver element creating the penetration. To look only at the destruction the air forces created is to overlook the disruption of the enemy that created the internal flanks the ground forces exploited.

Next let us analyze airplanes performing the most costly of all forms of maneuver—the frontal assault. A frontal assault is defined by FM 100-5 as an assault that strikes the enemy across a wide front and over the most direct approaches. For deliberate attacks, it is the least economical form of maneuver since it exposes the attackers to concentrated fire of the defender while simultaneously limiting the effectiveness of the attacker's own fires. It was such a frontal assault that the Israeli Air Force (IAF) was forced to undertake on the first day of the 1973 Yom Kippur War.

To better understand the nature of the frontal assault conducted by the IAF during the 1973 war, let us first review the conduct of Israeli air operations during the 1967 Arab-Israeli war:

> It can be argued that air power won its most striking victory of all time in the June 1967 war. Preemptive strikes by the Israeli Air Force (IAF) on the first day destroyed the bulk of the numerically superior Arab air forces on the ground, permitting Israeli armor and close-support aircraft to decisively crush numerically superior Arab ground forces. On that first day, the IAF destroyed 85 percent of the Egyptian Air Force and a total of 410 Arab aircraft in exchange for 19 aircraft lost. . . . Although the Egyptians had 18 to 25 batteries of SA-2s, those batteries had no direct effect on the battle.[33]

Now, let us contrast the IAF's success in the first day of the 1967 war to the losses it suffered in the frontal assault it conducted on the first day of the 1973 war:

> The Egyptians had what was doubtless their finest hour of all the Arab-Israeli wars at the outset of the October 1973 campaign. Precisely coordinated with Syrian attack in the north, the Egyptians began their air strikes and artillery barrages just after 1400. . . .
>
> . . . within about seven hours the engineers had washed gaps in the sand ramparts on the east side of the [Suez] canal with high-pressure streams of water, laid 10 bridges, and established many ferries. . . .
>
> The Egyptians had advanced on a very broad front and halted their movement . . . five miles to the east of the canal, well under the protection of the fixed missile defenses still emplaced on the west bank. . . . The halt was intended to cause the IAF to bleed itself against the . . . Egyptians in prepared defensive positions, and it did.[34]

The first missions conducted by the IAF against the Egyptians were disastrous. By dark on the first day, the IAF had lost five aircraft. At the end of the first 24 hours of the war, IAF losses had risen to 30. Clearly, the frontal attack was costly. Unfortunately, this sacrifice produced negligible results. The Egyptians remained firmly entrenched on formerly Israeli territory. The IAF planned to attack the missile sites on Sunday, 7 October, to allow air operations against the Egyptians. Minister of Defense Moshe Dayan changed those plans because of the more desperate situation on the Golan Heights. The IAF was committed to its second frontal attack against entrenched enemy forces on the Golan Heights for the second time within 24 hours of its losses over the Suez Canal.

Arab defenses again inflicted serious losses on the IAF's fighter aircraft—30 A-4s and several F-4s over Golan alone. IAF pilots had not flown against the SA-6 and ZSU-23 before, but the ground situation justified desperate risks. The Israeli army received continuous air support, and there hardly seemed to be a moment when a pair of fighter-bombers was not roaring over toward Syrian positions. "Air, we couldn't have done without it," said a Golan veteran. "Yet, when we brought it in we had to take the losses."[35]

The losses were indeed high. By the end of the first week, the IAF had lost 78 aircraft on both fronts. By the 18th day of the war, the total losses had climbed to 105 planes. Had not the United States resupplied fighters to Israel, the IAF would have ceased to be an effective fighting force at the end of the frontal attack phase of the war. In all, 36 F-4s, 20 A-4s, and 13

C-130s were transferred to the IAF. With these replacements, the IAF was able to support the ground forces in the next phase of the war.

A form of offensive maneuver, frontal assault, had placed the Israelis in dire straits, but a different form of maneuver, envelopment, proved to be their salvation. Envelopment is the basic form of offensive maneuver that seeks to apply strength against weakness. Its purpose is to avoid the enemy's front, where his forces are most protected and his fires most concentrated, and to strike at the enemy's flanks and rear. It was just such an envelopment that the Israelis used against the Egyptian Third Army:

> The hope was that after the missiles had decimated the IAF, then the Egyptian aircraft would be able to roam freely and they could be brought in for close air support. . . . The IAF prevailed, and the single line of communications to the ground forces on the west bank was secured. . . .
>
> . . . the southernmost forces commanded by Maj Gens Kalman Magen and Avrahan Adan were rolling through lightly defended and open terrain, fully supported now by air forces, and making good progress towards the Gulf of Suez and the complete encirclement of the Egyptian Third Army.[36]

The result was a total Israeli victory. These examples justify the belief that in offensive operations air forces can be analyzed as an independent maneuver element acting within the commander's scheme of maneuver. Indeed, air forces integrated into offensive maneuver operations suffer losses commensurate with ground forces used in the same role. In other words, the more direct the maneuver role delegated to air forces, the higher price those forces pay to conduct the maneuver. The contribution of air power simply cannot be explained as a firepower equation. Operational art requires air power to be integrated into the commander's scheme of maneuver, not simply into the fire support plan. This is true of offensive forms of maneuver, but does it hold for the defense, where historically firepower is most essential? Let us now turn to the operational art of employing aircraft in defensive maneuver operations.

## Aircraft in Defensive Operations: The Cavalry to the Rescue

In *On War*, Carl von Clausewitz argued that the defense is the stronger form of waging war. Unfortunately, through the years the emphasis on offensive operations led to the operational art of the defense being largely ignored. These opinions are reflected in Lt Col Charles Willoughby's *Maneuver in War:*

> The increased possibilities of defense are beginning to be appreciated and have found a very definite echo in modern military literature . . . where the defense is concerned; the defense is still a stepchild, a military Cinderella, while it represents in reality the highest form of military leadership in establishing a proper balance between the defensive and the offensive. . . . Great commanders have invariably appreciated the balance. The initial strategic decision has all the ingredients of the philosophy of the

defensive maneuver, i.e., to strip the defensive front to the bone in order to establish the mass for offensive action elsewhere.[37]

FM 100-5 continues to recognize the defense as operational art. Under this concept, a successful defense consists of reactive and offensive elements working together to deprive the enemy of the initiative. A successful defense can never be totally passive. The defender must resist and contain the enemy, but where possible he must also go on the offensive. The purpose of defensive operations is to defeat the enemy attack; control key terrain; wear down the enemy as a prelude to offensive operations; and always retain strategic, operational, and tactical objectives.

The fundamentals of a defensive campaign consist of preparation, disruption, concentration, and flexibility. These fundamentals are additive and must be connected within a defensive framework to be successful.

A successful defensive framework must accomplish the following tasks: (1) security force operations forward and to the flanks of the defending force, (2) defensive operations in the main battle area (MBA), (3) reserve operations in the main defensive effort, (4) deep operations in the area forward of the forward line of own troops (FLOT), and (5) rear operations to retain freedom of operations in the rear area. Unquestionably, air forces can accomplish several of these tasks.

Although defensive operations take a variety of forms, traditional military publications divide defensive operations into two broad categories: the mobile defense and the area defense. The mobile, or active, defense must focus on the destruction of the attacking force by allowing the enemy to advance into a position that exposes him to counterattack and envelopment by a mobile reserve. Area defense, on the other hand, focuses on the retention of terrain by absorbing the enemy into an interlocking series of positions from which he can be destroyed with firepower. In two major campaigns of the Second World War, air forces provided the independent maneuver elements that accomplished both of these forms of defensive maneuvers. First, let us focus on the operational art of employing airplanes in a mobile, or active, defense.

The Battle of the Bulge in the closing days of World War II is a classic example of an air-ground integrated mobile defense. On 16 December 1944 the German army launched its first offensive in three years in an attempt to drive a political wedge between the Americans and the British. Adolf Hitler hoped to split the Allied armies and trap 35 Allied divisions, forcing a second Dunkirk-style evacuation.

For this purpose, the Germans massed 24 divisions against the four US divisions holding the Ardennes Forest. The offensive plan called for the Sixth Panzer Army to conduct the primary attack with the Fifth Panzer Army supporting on the left, or southern, flank. On the right, or northern, flank the German Fifteenth Army was to pin the British armies, while the German Seventh Army blocked Gen George Patton's US Third Army on the southern flank.[38]

The Germans achieved their first objective of total surprise and the Allied armies were forced to withdraw with many Allied soldiers captured. The center of gravity for the Germans was the tempo of their advance. To maintain the required timetable of advance, the German armies needed to seize key roads and bridges. Weather was the key factor. The ground had to remain frozen to support German off-road armor tactics, and low clouds and fog were essential to nullify Allied air superiority. Most of all, however, the operation hinged on the German ability to logistically support the German armies in the attack.

The essential tempo of German attack could only be maintained with excellent logistics support, but the intensity of the action consumed supplies at a fantastic rate. In addition, supplies could only be transported over constricted and ever-lengthening supply lines. It was against the German tempo of advance and protracted supply lines that Gen Dwight Eisenhower oriented his active defense.

General Eisenhower established his defensive objectives. First, the Allied forces must keep the breach in Allied lines as narrow as possible. Second, key communications centers, such as the town of Bastogne, must be held at all costs to slow the German advance. Also, Gen Bernard Montgomery's 21st Army Group must limit the depth of the penetration by establishing a defensive perimeter—an area defense. Finally, General Montgomery's forces would counterattack.[39]

General Eisenhower knew that his air forces were the key to the success of his defensive efforts. He established the objectives for an air campaign to be conducted against the bulge created by the German advance. First, Allied air forces would maintain air supremacy and prevent the Luftwaffe from giving direct air support to the German armies. Second, Allied air forces would act in close cooperation with ground forces to slow the German armored spearheads, which were the most immediate threat. Finally, the air forces would interdict the German logistics effort.[40]

It is interesting to note that General Eisenhower's priorities for this air campaign contradicted the priority system doctrinally stated in FM 100-20, *Command and Employment of Air Power.* According to this manual, the second priority should have been the isolation of the battlefield. The third priority was close cooperation with ground forces.[41] Fortunately, General Eisenhower was less concerned with doctrine than the realities of the situation.

Trained as a ground commander, General Eisenhower was well aware that the first principle of an active defense is that the force conducting the mobile defense must have *equal or greater mobility* than the enemy. The mobile defense force must also be able to form the large reserve that will conduct the decisive counterattack. General Eisenhower used his air forces as his mobile defense force because it was the only force available with the mobility and mass required.

The Allied air forces executed their air-to-ground missions to meet General Eisenhower's objectives. First, fighter-bombers of the IX Tactical

Air Command attacked the German armored forces along its primary axis of attack—the northern side of the bulge. Second, the Ardennes-Eifel area was isolated from rail traffic. This job fell to the light and medium bombers of the 9th Bombardment Division, which attacked German choke points and railroad bridges.[42] Even strategic bombers were diverted to this effort. The Eighth Air Force conducted carpet-bombing attacks to isolate the battlefield. Storage areas, rail yards, and supply dumps were attacked around the perimeter of the bulge in support of this effort.[43]

The Allied active defense, based on the priorities of air superiority, close cooperation, and battlefield isolation, was totally successful. In a captured German document, Field Marshal Walter Model, commander of Army Group B during the Battle of the Bulge, expressed these thoughts on the Allied use of air power in the active defense: "Enemy number one is the hostile air force, which because of its absolute superiority tries to destroy our spearheads of attack and our artillery through fighter-bomber attacks, bomb carpets, and to render movements in the rear areas impossible."[44]

The air operations conducted during the Battle of the Bulge were consistent with the active defense operations later envisioned by AirLand Battle doctrine. General Eisenhower's air and ground forces conducted a synchronized active defense against the German attack. Simultaneously, Allied air forces conducted a deep, close, and rear battle. Because of their superior capability to maneuver, they were the spearhead of the Allied active defense. It is essential to understand that targets were not the focus of this effort. General Eisenhower prioritized the focus of the effort, not the targets to be attacked. Do these principles work as effectively in the area defense role?

FM 100-5 describes an area defense as a form of maneuver conducted to deny the enemy access to specific terrain for a specified time. Unlike the mobile defense, an area defense is not intended to destroy the attacking force but instead presumes that some other simultaneous or subsequent operation will achieve the decisive defeat of the enemy.[45]

Again, the best example of an area defense lies in the history of World War II. That example is the Allied air efforts to isolate the invasion beaches before D-day. The preparation for Operation Overlord (the invasion of Europe) conducted in accordance with the doctrine contained in FM 100-20 established three priorities for the employment of air power. The establishment of air superiority was the first priority. Second, the landing beaches on Normandy were to be isolated. Third, once the troops were established on the Continent, the tactical air forces would conduct close-cooperation missions. The first and second priorities were to be accomplished by Operation Pointblank. At the Casablanca Conference in 1942, the Allied leaders had noted the need for Overlord to be preceded by a bombing campaign that would destroy the Luftwaffe and the German transportation infrastructure. That campaign became known as Operation Pointblank.[46]

Allied leaders were concerned over the growing strength of the German air forces. The Luftwaffe had been increasing in strength due to the full mobilization of the German economy. German fighter production had actually increased from 720 to 810 per month between August 1942 and April 1944. This increase was more alarming considering the costs of the strategic bombing campaign that was being conducted against the German aircraft industry. Allied air authorities believed that the Germans could have 3,000 planes with which to oppose the invasion unless something were done to check this trend.[47] The Allied planners knew the Luftwaffe would use those assets to stop Operation Pointblank, so they decided on a bold strategy. Ninth Air Force fighters were released from escort duty and permitted to accomplish phase 1 and phase 2 operations as defined in FM 100-20. "In short, Ninth Air Force fighters would be free to engage the enemy and destroy his ability to assault our bombers or invasion force."[48]

Through a combination of strategic and tactical bomber and fighter-bomber missions, the first phase was accomplished. On D-day, the Germans could only mount 70 fighter sorties against the beaches of Normandy. The Allies had attained air superiority.

In accordance with FM 100-20, the second phase of Operation Pointblank was conducted "to prevent the movement of hostile troops and supplies into the theater of operations or within the theater."[49] The target set to be interdicted included railroads and the bridges along the Seine River. In addition, airfields, gun emplacements, and the V-1 and V-2 launch sites were to be attacked. There was an additional detail: the battlefield had to be isolated without tipping the Germans as to the location of the invasion!

In order to take German attention away from Normandy, a second operation was conducted concurrently with Operation Pointblank—Operation Fortitude. Fortitude attempted to deceive the Germans into believing the invasion would come at Pas de Calais. Allied planners assured the credibility of this plan by directing that two-thirds of the Allied air attacks on the Continent occur in the Pas de Calais area.[50] Even with large numbers of assets diverted to Fortitude, the Allied air forces accomplished phase 1 and 2 operations prior to D-day and continued their success through the critical "battle of the buildup" after the invasion.

In his book *Overlord: D-Day and the Battle for Normandy*, Max Hastings describes the plight of the German forces attempting to penetrate to the beaches on the day of the invasion. The 21st Panzer Division began to move toward the invasion beaches the morning of the landings. "As they moved forward, they were repeatedly compelled to pull by the roadside and scramble beneath their tanks as Allied aircraft roared low overhead."[51] Movement was slow, but casualties were light. This pattern of heavy harassment but only light damage was characteristic of all German units moving forward on D-day:

> The 21st Panzer's armored regiments were able to reach the battlefield on D-day from their harbors around Falaise, with only minimal losses to air attacks. Panzer Lehr's journey was fraught with frustration and harassment, but its order of battle

> diminished by less than 10 percent. . . . The allegedly appalling journey of the 2nd SS Panzer Division has passed into legend of the Second World War, and its arrival was certainly much delayed by encounters with the Resistance and Allied air forces. But its material losses of tanks and armored vehicles was negligible.[52]

Unquestionably, Allied airmen were instrumental in the ultimate success of Overlord. The conventional wisdom would call these operations an excellent example of aircraft delivering defensive fire support. As operational art, this description falls far short of *what* was accomplished. These operations were accomplished by an independent maneuver element conducting the maneuver portion of an area defense. Air forces were the only maneuver element that could exert the necessary combat power in the limited time and space available. These forces did not destroy the enemy; only the invasion ground forces had sufficient mass to do that. Instead, air forces bought the ground forces the time and space to build up the necessary mass—exactly what FM 100-5 defines the mobile force of an area defense as accomplishing.

## Summary

The purpose of this first chapter is to establish a different perspective for investigating *what* air forces do to support ground forces. Military men have focused too often on the massive firepower of the airplane as its only contribution to military success. This view leads to a narrow perspective that translates into how much destruction air forces produce. History simply does not support this perspective.

The examples cited in this chapter illustrate that the operational art of employing airplanes is not simply a firepower equation. Operational art requires that airplanes integrate into the maneuver as well as the fire support of a commander's campaign plan. Commanders cannot simply consider the value of airplanes by how many things they can "kill." The brilliant commander understands that airplanes are best integrated into his scheme of maneuver as an independent maneuver element (flying cavalry), not simply flying artillery.

Airplanes as operational art are not flying artillery, antitank weapons, or flying tanks. What airplanes do best is to build obstacles (combat engineers), to attack exposed flanks (reserves), and to strike key targets deep behind enemy lines (strategic cavalry). To best use these assets, a commander must think of integrating them as maneuver elements, not simply of deconflicting them like fire support. Unfortunately, both Army and Air Force officers are guilty of delegating the use of airplanes to the servicing of targets, a concept that exists only at the tactical level of war, the *how* level. A successful campaign plan focuses on *what* airplanes accomplish at the operational level. The next chapter analyzes tactical air support doctrine. The central question posed is, Can modern Tactical Air Command

doctrine support operational art or does it address only the tactical level of war?

**Notes**

1. John L. Romjue, "AirLand Battle: The Historical Background," *Military Review* 66, no. 3 (March 1986): 53.
2. Maj Jonathan B. A. Bailey, *Field Artillery and Firepower* (Oxford, U.K.: Military Press, 1989), 297–98.
3. John L. Romjue, "The Evolution of the AirLand Battle Concept," *Air University Review* 35, no. 4 (May–June 1984): 4–15.
4. FM 100-5, *Operations*, 5 May 1986, 10.
5. Ibid., 12.
6. Ibid.
7. Romjue, "AirLand Battle: The Historical Background," 55.
8. Bailey, 15.
9. Ibid.
10. Ibid., 16.
11. Ibid., 5–6.
12. Brig Gen Paul Pearson, "Can Army Fire Support in Europe Do the Job?" *Armed Forces Journal International*, December 1987, 63.
13. Bailey, 161.
14. Maj Gen J. F. C. Fuller, *Machine Warfare* (Washington, D.C.: Infantry Journal, 1943), 64–71.
15. Maj Gen I. B. Holley, Jr., USAFR, Retired, "Of Saber Charges, Escort Fighters, and Spacecraft: The Search for Doctrine," *Air University Review* 34, no. 6 (September–October 1983): 2.
16. Charles Fair, *From the Jaws of Victory* (New York: Simon and Schuster, 1971), 197–98.
17. Holley, 2.
18. Gen Sir James Marshall-Cornwall, *Grant as Military Commander* (New York: Van Nostrand Reinhold Company, 1970), 110–11.
19. James M. McPherson, *Battle Cry of Freedom: The Civil War Era* (Oxford, U.K.: Oxford University Press, 1988), 628.
20. Richard Wormser, *The Yellowlegs: The Story of the United States Cavalry* (Garden City, N.Y.: Doubleday and Company, Inc., 1966), ix.
21. Holley, 6.
22. FM 100-5, 43.
23. Ibid., 44.
24. Romjue, "AirLand Battle: The Historical Background," 55.
25. Bailey, 314–15.
26. TACM 2-1, *Tactical Air Operations*, 15 April 1978, 4–39.
27. Charles Andrew Willoughby, *Maneuver in War* (Harrisburg, Pa.: Military Service Publishing Co., 1935), 46.
28. A. Goutard, *The Battle of France 1940* (New York: Ives Washburn, 1959), 132.
29. *Condensed Analysis of the Ninth Air Force in the European Theater of Operations* (Washington, D.C.: Office of Air Force History, 1984), 23.
30. Max Hastings, *Overlord: D-Day and the Battle for Normandy* (New York: Simon and Schuster, 1984), 298.
31. T. Copp and R. Vogle, *Anglo-Canadian Tactical Air Power in Normandy: A Reassessment* (Richmond, Va.: American Military Institute, 1987), 11.
32. Bailey, 198.

33. Kenneth P. Werrell, *Archie, Flak, AAA, and SAM: A Short Operational History of Ground-Based Air Defense* (Maxwell AFB, Ala.: Air University Press, December 1988), 138.

34. David R. Mets, *Land-Based Air Power in Third World Crises* (Maxwell AFB, Ala.: Air University Press, July 1986), 96–97.

35. William H. Rees, "TAC Air: Member of the Team Supporting the Supersoldier," *Infantry*, May–June 1976, 16–23.

36. Mets, 109, 111.

37. Willoughby, 124–28.

38. Vincent J. Esposito, *West Point Atlas of American Wars* (New York: United States Military Academy, 1959), 60.

39. Office of the Assistant Chief of the Air Staff, "Another Tactical Air Triumph," *Impact* 3, no. 2 (February 1945): 8.

40. Operational History of the Ninth Air Force, book I, "Battle of the Ardennes: 1 December 1944–31 January 1945" (Headquarters Ninth Air Force, 1945).

41. FM 100-20, *Command and Employment of Air Power*, 21 July 1943, 11.

42. Gen Dwight D. Eisenhower, *Operations in Europe of the Allied Expeditionary Force, 6 June 1944 to 8 May 1945*, report (Supreme Commander of the Combined Chiefs of Staff: SHAEF, 1945), 72.

43. *History of the Eighth Air Force: Invasion and Victory* (Headquarters Eighth Air Force, 1945), 144.

44. Operational History of the Ninth Air Force, book I, "Battle of the Ardennes," 5.

45. FM 100-5, 134–37.

46. Maj Michael L. Wolfert, "From ACTS to COBRA: Evolution of Close Air Support Doctrine in World War Two," Research Report 88-2800 (Maxwell AFB, Ala.: Air Command and Staff College, 1988), 53.

47. *Ninth Air Force in the ETO, 16 October 1943 to 16 April 1944*, Army Air Forces Historical Study 32 (Washington, D.C.: Army Air Forces Historical Division, 1945), 118.

48. Wolfert, 55.

49. FM 100-20, 11.

50. Wolfert, 60.

51. Hastings, 110–14.

52. Ibid., 267.

## Chapter 2

# Tactical Air Forces Doctrine

To understand why aircraft have been relegated to the role of flying artillery, it is first necessary to examine the doctrinal basis for the employment of tactical aviation. The bible of modern US tactical air forces is TACM 2-1, *Tactical Air Operations*. The introduction to TACM 2-1 states, "This manual provides the single source document delineating the missions/functions/activities of all tactical air missions and supporting activities and shows how they interrelate in tactical air operations."[1] A tactical air operation is defined in Air Force Regulation (AFR) 23-10, *Tactical Air Command*, as the employment of tactical air power to gain and maintain air superiority, to inhibit movement of enemy forces, to seek out and destroy enemy forces and their supporting installations, and to seek out and directly assist ground and naval forces to achieve their objectives.[2]

The tactical air forces are constituted for one reason—to help ground and naval forces achieve their objectives. This cooperation is usually identified as close air support, but in reality this is only a small portion of that support. Unfortunately, the essence of air support is equated to fire support, that is, to airborne artillery. Because of this emphasis, the thrust of the doctrinal guidance is aimed at deconflicting ground and air fires. This may suffice at the tactical level of war, but integration, not deconfliction, is required at the operational level of war.

Fire support operations are usually deconflicted, not integrated. TACM 2-1 should address the operational level of war and *what* the integration of air and land forces entails. Does it accomplish that function? This chapter's central question is, Does tactical air forces doctrine address the operational level of war? First, however, let us focus briefly on the uses of doctrine.

## What Is Doctrine?

No word in the military lexicon is used more and understood less than the word *doctrine*. There have been a number of definitions and meanings given to the word.

Joint Chiefs of Staff (JCS) Publication 1, *Department of Defense Dictionary of Military and Associated Terms* (the official listing of Defense Department terminology), defines doctrine as the "fundamental principles by which the military forces or elements thereof guide their actions in support of national

objectives."[3] Air Force Manual (AFM) 1-1, *Basic Aerospace Doctrine of the United States Air Force*, takes a slightly different approach, defining *doctrine* as "once the decision to use military force is made, doctrine describes the best way to employ military forces to achieve objectives."[4]

These definitions give an indication of what doctrine is intended to do but offer no clear indication of what doctrine is. This dilemma has forced operational commanders to search for a more functional definition of doctrine. Maj Gen I. B. Holley, Jr., offers one such definition: "Doctrine is officially approved prescriptions of the best way to do a job. Doctrine is, or should be, the product of experience. Doctrine is what experience has shown usually works best."[5]

His definition gives a good map for locating doctrine; but like the official definition, it still does not indicate what doctrine is. Let us look at a definition of doctrine used by Gen Curtis E. LeMay:

> At the very heart of warfare lies doctrine. It represents the central beliefs for waging war in order to achieve victory. Doctrine is of the mind, a network of faith and knowledge reinforced by experience which lays the pattern for the utilization of men, equipment, and tactics. It is the building material for strategy. It is fundamental to sound judgment.[6]

From General LeMay's definition, it is clear that doctrine must address operational art. Doctrine is the bridge between strategy and tactics. The problem with a definition of doctrine is that too often we say "doctrine" when we are really talking about strategy or tactics. Unless we are addressing operational art, we are not addressing doctrine. Such misunderstandings lead to misapplication of the word *doctrine* and to the creation of false dilemmas. A short example will perhaps clarify this allegation.

Lt Col Stephen T. Rippe, US Army, in his article "An Army and Air Force Issue: Principles and Procedures for AirLand Warfare," makes the following argument about the Air Force's misuse of the word *doctrine*:

> Conceptually, the U.S. Army and the U.S. Air Force view the term *doctrine* differently. *Doctrine*, in Army terms, conceptually translates into "how the Army fights." *Doctrine*, in Air Force terms, conceptually translates into "a statement of officially sanctioned beliefs and warfighting principles." Simply put, the Army will fight wars based on its doctrine, while the Air Force may fight its wars based on "theater-specific doctrines" that will be more specific than that which is "officially sanctioned."[7]

Colonel Rippe's error is in focusing on *how* to fight rather than on *what* that fighting is intended to accomplish. How to fight is addressed at the tactical level of war, and what that fighting accomplishes in the context of the campaign plan is the operational level of war. Campaign plans must be theater specific because they reconcile theoretical ideas with the reality of the environment in which the battle must be conducted. A close examination of the levels of war should illustrate this truth.

There exist four levels of war: grand strategic, strategic, operational, and tactical. The grand strategic level of war is the most basic and most consequential. At this level, a nation determines its national policies, evaluates if those policies can best be served by armed conflict, and

determines the objectives to be achieved by that conflict. The strategic level of war concerns the overall conduct of the war. The number of forces and the weight of efforts to be devoted to different objectives are decided at this level. Next comes the operational level of war. Delicate decisions must be made at this level. Here the strategic objectives of the conflict must be resolved with the forces available. Availability is the key point. Will the efforts of these forces be prioritized or will forces be allocated to accomplish several tasks simultaneously? The operational level is where the philosophical objectives of grand strategy meet the hard reality of combat capability available to the commander. Finally comes the tactical level of war, the level where battles are fought, won, or lost.

Doctrine must guide the operational level of war. National strategy determines if the nation will contest its enemies through force of arms. Strategy determines the force structure and the amount of effort to be allocated to the different theaters of war. Doctrine must bridge the gap between force structure desired and force structure available. For this reason, doctrine must identify *the officially sanctioned principles of what forces can best accomplish based on the lessons of history and adapted to the realities of the environment.* How these forces fight belongs in the realm of tactics; what this fighting accomplishes is the domain of doctrine. Before discussing if modern tactical air forces doctrine discusses operational art, let us look at the evolution of tactical air doctrine.

## Evolution of Tactical Air Forces Doctrine

Prior to World War II, the concepts of *what* aircraft best accomplished in combat came from two totally separate sources—the actual combat experiences of World War I and the beliefs of air power enthusiasts who saw great potential in the technology of airplanes but whose ideas were not supported by the combat experiences of World War I. To understand *what* airplanes do best in war, we must evaluate the role of both these sources in the evolution of tactical air power doctrine.

During World War I aviation served three main functions. First, airplanes were the eyes of ground commanders, extending their vision of the battlefield beyond simple line of sight. Next, aircraft furnished with explosives began attacking ground troops and deeper targets, including civilian population centers. Finally, aircraft equipped with guns contested other aircraft for control of the sky. Airplanes could now deny other airplanes the use of air space, just as armies and ships denied their enemy counterparts terrain and sea.

These capabilities translated into three missions defined by specific type of aircraft: attack aviation was to attack enemy ground forces; bombardment aviation was to attack enemy targets behind enemy lines, including population centers; and finally, pursuit aviation was to fight the enemy's

air forces for control of the air. It is important to note that these missions were driven by technology. Airplanes were designed for specific roles because technology did not allow multirole aircraft.

These lessons of World War I are in volume 4, *Postwar Review*, of *The US Air Service in World War I.* This work, compiled and edited by Maurer Maurer and published by the Office of Air Force History in 1979, contains some interesting conclusions. First, attack aviation had seen limited use in the war, but the use of those aircraft over the front lines, and especially in strafing attacks over the trenches, was considered extremely costly and of little use. Attacks on ground forces behind enemy lines—especially against artillery, truck columns, and a retreating enemy—were deemed more effective and much less hazardous. Attack aviation was judged to have potential for the future.

Pursuit aviation, emerging from the World War I experience as the primary arm of the Air Service, was the primary weapon in both offensive and defensive roles for the control of the air. Air superiority, which was essential to success on the ground, could only be gained by the pursuit arm.

Bombardment aviation emerged from World War I as the least proven air arm because very limited strategic bombing had been conducted. The conventional wisdom of 1919 held that strategic bombardment had potential for the future but had to be restricted to night attacks and modified area bombing.

In summary, the US Air Service had one proven mission as a result of its World War I experience: "air support of the surface struggle."[8] The main target of the air arm was the enemy forces both in the air and on the ground. Now contrast these World War I lessons to the doctrinal theories put forth by the Air Corps Tactical School (ACTS) in the 1930s.

The attack doctrine of the Army Air Corps had changed little since World War I. The cardinal rule was still no frontline strafing or attack. The primary targets for attack pilots were considered to be aircraft, supply lines, and enemy communications. Attack aviation, however, was considered by the ACTS instructors to be secondary to the role of strategic bombardment in defeating the enemy.

Pursuit aviation was no longer the primary air arm. The pursuit mission was now seen as basically defensive in nature, with interception of the enemy's offensive strategic bomber force as its primary mission. Because pursuit aircraft were technologically inferior to the bomber in both speed and range, their ability to accomplish their mission was considered extremely unlikely by the ACTS instructors.

In the curriculum of the Air Corps Tactical School, the strategic bomber had replaced the pursuit aircraft as the primary air arm. According to the ACTS instructors, technology had made the bomber invincible to attack, giving it de facto air superiority. The enemy army was not considered a worthy target for so formidable a weapon. The bomber on its own would

win decisive victory through mass indiscriminate bombing of the enemy's population centers. The result of this intellectual exercise was that less than 14 years after World War I, the Air Corps Tactical School had totally rejected the wartime experiences of *what* airplanes did best in favor of a totally different and untested view of air warfare.

By 1941, due to the influence of the ACTS instructors, the Army Air Corps force structure bore no resemblance to the force dictated by the lessons of World War I. Attack doctrine stated that the primary mission for attack aircraft was tactical support against surface installations and enemy forces in the rear area. Therefore, attack aviation had no dive-bombing mission. Pursuit doctrine held that pursuit airplanes were defensive in nature and that interception of the enemy bomber force was their primary mission. Pursuit aviation had no escort mission in support of the bomber force.

Bombardment aviation acting alone was the primary offensive air arm—the key to victory. Its method of attack was daylight, precision, high-altitude bombardment. The target set for these attacks was the enemy's industrial web. Industrial targets must be prioritized, with one target set being destroyed before moving on to another target set.

It must be remembered that these ideas on doctrine were those of the Air Corps Tactical School and the Army Air Corps. The official doctrine of the US Army, however, contained a totally different opinion of the use of aircraft in war. FM 31-35, *Air-Ground Operations*, contained the official US Army tactical doctrine for air power. Under this manual, Army Air Corps aviation was divided into a series of air support commands. Each air support command was tied to a ground unit and was composed of fighter, observation, attack, and bomber aircraft to support the ground forces.[9] FM 31-35 defined the relationship of the army and its supporting air forces in this way:

> 1. Air support aviation was "normally constituted into air support commands which ordinarily are parts of air forces."
>
> 2. The air support commander, normally functioning under the Army, theater, or task force commander, was to act as the air advisor to the ground commander.
>
> 3. Although no specific priorities were established, the missions of combat support aviation were listed as being: reconnaissance; bombardment; attacks on defensive organizations; attacks on enemy reserves and reinforcements, especially those moving toward the front since they were more vulnerable than dispersed units; attacks on hostile mechanized forces before they made contact with the force they were to support; attacks on hostile aviation; and support of parachute and other airborne troops.[10]

The US Army and the Army Air Corps were apparently on divergent paths as World War II loomed on the horizon. The Army ground commanders were the traditionalists who held to the opinion that nothing had changed since World War I and that the primary mission of tactical air forces was to maintain air supremacy over the ground forces. Inherent in this belief was the perspective that air forces were an *ancillary/auxiliary* force to ground power and unable to win victory through independent actions.[11] Ground commanders universally held that the lessons of World War I had not been

modified by the advances in technology during the interwar years. Unfortunately, they misinterpreted the lessons of World War I. That war had revealed the following keys to the successful use of air power:

1. Aerial superiority was the prerequisite to successful air operations.

2. The only effective means of establishing and maintaining control of the air was through determined offensive against the hostile air force.

3. When air attacks against both hostile air forces and vital rear areas were carried out in depth, enemy reconnaissance and pursuit action against friendly front lines decreased.

4. By limiting the air service to reconnaissance and observation, the Army failed to take full advantage of military aircraft which could either bomb enemy economic resources or strafe his forces.

5. In battle, the air arm was more effective if concentrated under a single commander.[12]

Ground commanders accepted the necessity of air superiority but misinterpreted what achieving it entailed. The priority of operations from the ground commander's perspective was first to achieve air superiority. Next, aircraft would focus on supporting the ground forces in their operations. The lesson of World War I that was not accepted by ground commanders was the need for air forces to be controlled by a single commander. Ground commanders believed they should have their own organic air assets to support their operations. These forces would act as an "air umbrella" over the ground forces to both assist ground operations and to increase the morale of the ground forces. Unfortunately, as Lt Gen Lesley J. McNair observed, "Each ground commander would employ his air power in 'penny packets,' which violated the principles of unity of command and economy of force."[13]

It is important to remember that both ground and air commanders were in agreement as to *what* was necessary: air superiority. *How* to achieve air superiority through the employment of air forces was in contention. Air and ground commanders had other disconnects.

In addition to differences in opinion of how to achieve air superiority, *how* aircraft could best support ground forces was also a topic of debate. Ground commanders wanted airplanes employed as close to the front lines as possible so their troops could be better protected and could see airplanes. The airmen, however, recalled that World War I had demonstrated the front lines to be the hardest and most dangerous place to operate. Remembering those lessons, the Army Air Corps believed close air support and interdiction should begin "at the far range of indigenous artillery support within each ground organization."[14]

A separate issue for the Army Air Corps was the ultimate contribution that aircraft made to victory. Instructors at the Air Corps Tactical School insisted that the maximum contribution that aircraft could make to victory did not involve the enemy army but rather the proper targeting of the enemy heartland. Instructors such as Maj (later Gen) Muir S. Fairchild urged that planners "make preparations now—in advance—to wage Air Warfare, rather

than to employ our valuable Air Force to reinforce the supporting fires of the artillery." He believed the basic question was proper target selection.[15]

It was in the years just prior to the United States' entry into World War II that the Army Air Corps focused on target selection as the essential element in defeating the enemy. "Within the War Department it was decided that the Army air arm, while still a part of the War Department, would independently prepare the estimate of air needs required by the President's directive."[16] This plan became known as Air War Plans Division-1 (AWPD-1).

AWPD-1 contained several radical notions. First, the air plan contemplated offensive operations against the Axis, with operations in support of ground forces a subsequent mission only if the invasion of the Continent became necessary. Second, the center of gravity for this air offensive would not be the German army but rather the German industrial base and the German will. "Strategic bombardment theory had developed to the point where it was possible for the planners to specify in AWPD-1 the exact target systems, and numbers of targets, which it would be necessary to destroy in order to achieve the general objective."[17] The targets identified for destruction were nearly all precision targets. Clearly, if AWPD-1 was to be conducted, daylight precision bombardment attacks would be required.

Thus, on the eve of World War II, the Army and the Air Corps were on divergent doctrinal courses. The ground commanders felt that each ground command needed its own air force for support. The Air Corps commanders felt technology had made strategic bombardment the proper weapon for winning victory though this had not been validated in the experiences of World War I. This was the atmosphere of disagreement at the time that the United States entered World War II. Unfortunately, this doctrinal malaise was not simply intellectual but was also reflected in the force structure of the Army Air Corps.

Lt Gen Lewis H. Brereton stated in his personal diaries that "in the entire Air Force combat commands on 1 October 1941 we had only 64 first pilots and 90 copilots qualified on four-engine bombers; 97 pilots and 108 copilots qualified on two-engine bombers; and 108 pursuit pilots. No Army Air Corps pilot was qualified as a dive-bomber pilot."[18] The Army and its Air Corps entered the war in this sorry condition. North Africa would see the first combat test of these concepts. The lessons would be paid for in blood.

## Into North Africa

The Army Air Corps attempted to support Army operations in North Africa using the doctrine contained in FM 31-35. Unfortunately, in combat the "air umbrella" concept translated into the requirement for Air Corps pilots to provide continuous top cover for each Army formation. This system denied air commanders the ability to concentrate their forces, a violation of one of the principles of war—mass. In addition, because these air assets

were tied to individual units, air commanders had no flexibility in the application of air power. The results of these operations were best summarized by Brig Gen L. E. Oliver on 5 February 1943: "The air arm was unable to protect allied ground troops from dive-bombers and strafing or to attack enemy ground troops holding up allied advance."[19] In short, the defensive nature of the air umbrella concept "stripped air power of its flexibility and ability to concentrate its power on the crucial targets within the North Africa Theater."[20]

Maj Gen Perry M. Smith observed in 1970 that "once a military doctrine is established it is difficult to change, especially if technological advancement in weaponry seriously brings into question a doctrine upon which a specific military service is based. Like policy, doctrine has a gyroscopic effect."[21] The Army ground commanders felt that air assets were for their support and that air commanders must be subordinate to their orders. This was Army doctrine and this was how it would be. Only a disaster of the highest order would change their beliefs; that disaster occurred at Kasserine Pass.

In mid-February 1943 the Axis forces began what would be their last offensive in North Africa. Field Marshal Edwin Rommel, being pressed on the eastern front by the British Eighth Army, attacked the Allied line in Tunisia on his western front. Rommel's plan was to split Eisenhower's Allied forces while holding Montgomery's forces on his flank. On 18 February the Axis forces overcame American forces holding the Kasserine Pass. On 19 February the Axis forces poured through the pass overrunning many of XII Air Support Command's forward airfields. In addition, bad flying weather from 18 to 21 February made air support of the hard-pressed ground forces virtually impossible. Though the situation was eventually stabilized, the American Army had suffered its first major defeat in North Africa without effective air support.

Much of the emotional baggage that accompanies the issue of air support for ground forces can be traced to the air-ground relationship that was perceived to exist in North Africa at the time of the battle at Kasserine Pass. Two comments by military and civilian leaders of the period will illustrate the emotion that the defeat at Kasserine Pass ignited.

In a letter to Gen George C. Marshall, Brig Gen Paul M. Robinett, commanding general of Combat Command B of the 1st Armored Division, expressed the opinions shared by many of his fellow American ground commanders:

> My regiment has fought well, has had rather severe losses, but can go on. I have talked with all ranks possible and am sure that men cannot stand the mental or physical strain of constant aerial bombing without feeling that all possible is being done to beat back the enemy air effort. News of bombed cities or ships or ports is not the answer they expect. They know what they see and at present there is little of our air to be seen.[22]

These views were shared by authorities outside of the military. Assistant Secretary of War John J. McCloy stated his opinion of the competency of the Army Air Corps:

> It is my firm belief that the Air Forces are not interested in this type of work [CAS], think it is unsound, and are very much concerned lest it result in control of air units by ground forces. Their interest, enthusiasm and energy is directed to different fields [strategic bombing]. . . . What I cannot see is why we do not develop this auxiliary to the infantry attack even if it is of lesser importance. . . . It may be a wrong use of planes if you have to choose between the two but to say air power is so impractical that it cannot be used for immediate help of the infantry is nonsense and displays a failure to realize the Air's full possibilities. It is just as bad as the tendency of the Ground Forces, some time ago, to confine air operations to such work.[23]

These comments called into question the very loyalty of American airmen to the support of ground forces, not simply differences in doctrinal beliefs. Fortunately, another doctrinal model for the conduct of support operations for ground forces was available—that of the British. Kasserine Pass had proved the inadequacies of FM 31-35, and the Allies now saw the need for a combined doctrine to govern air-ground cooperation. The Casablanca Conference would supply that doctrine.

## Casablanca Conference

It was fortunate for the United States that the British had gone through many of these organizational growing pains during World War I and had developed a totally different relationship between its air and ground forces. The Royal Air Force (RAF) became an independent service during World War I. After the war, the RAF had served to police the empire under the British air control policy. "The official British definition of air control, circa 1933, noted that political administration of undeveloped countries rests, in the last resort, on military force. Air control implied that control is applied by aircraft as the primary arm, usually supplemented by forces on the ground, according to particular requirements."[24]

Because of the RAF's independent status and the fact that the air power experience had at times had air commanders in command of ground forces, the British command structure emphasized cooperation between air and ground forces based on the principles of equality, flexibility, and concentration of forces as an air-ground team. In North Africa, Field Marshal Bernard Montgomery and Air Vice-Marshal Sir Arthur Coningham synchronized the British air-ground activities using simple rules of conduct:

> 1. Air and ground commanders must have their headquarters alongside each other and must work to carefully coordinate common plans of action toward one goal—winning the battle.
>
> 2. The overall plan must conform to the air situation even if it involves the postponement or curtailment of the ground plan. This philosophy will result in fewer casualties and economy of force within the theater.

3. Once the joint air-ground plan has been decided and coordinated, the air commander must do his best to implement it by correctly applying his forces to the key objectives and within the principles of air war.

4. The first aim of the Air Force Commander must be to gain the initiative and, with it, air supremacy over the battlefield. When he has achieved his goal, he can go ahead with more direct support for the joint air-ground plan of operations.

5. The whole of the ground forces must thoroughly understand what air support means. They must realize that "out of sight" of ground forces does not mean that the ground forces or their needs are "out of the minds" of the airman.[25]

Indeed, the British command relationship between air and ground commanders was vastly different from the American system. The British focused at the operational level of war, while the Americans focused at the tactical level. The British focused on air power in the context of a campaign plan while the Americans focused on the control by each ground commander of his assets. Under the British system all assets (air, sea, and ground) were coequal and at the command of the theater commander to support his plan of operations. To reduce casualties, the air campaign must be prosecuted first. The air commander must first win the air war before he could help the ground commander in the ground battle. The ground commander planned his operations around the air commander's ability to achieve air superiority. Clearly, a meeting of the minds was necessary between the British and the Americans. Those differences were ironed out at the Casablanca Conference and became the concept of operations for the use of air-ground forces during the remainder of operations in the European theater of operations (ETO). These procedures were set down for the Army Air Corps in FM 100-20, *Command and Employment of Air Power.*

## War Department Field Manual 100-20

FM 100-20 was a revolutionary document. Some authors have described this manual as the "Declaration of Independence" of the Army Air Corps because it addressed air and ground commanders as coequal in importance. Naturally, this aroused emotional responses from both Army and civilian leaders. Many of these officials never looked past this portion of the manual to understand the true nature of FM 100-20. Let us try to analyze *what* FM 100-20 advocated as air doctrine beyond the coequality of air and ground commanders.

FM 100-20, published 21 July 1943, reflected the combat experiences of North Africa and in essence adopted the British system of cooperation between air and ground commanders. Although signed by Gen George C. Marshall, chief of staff of the Army, FM 100-20 was unfortunately not coordinated within the ground command side of the Army and was considered by many as purely a product of the Air Staff. This lamentable situation only served to confirm to the ground forces that the Air Staff was truly not interested in cooperating with or supporting the troops on the

ground.[26] Fortunately, Gen Dwight D. Eisenhower, the supreme Allied commander, saw much merit in FM 100-20. Let us examine the revolutionary ideas contained in this field manual.

FM 100-20 stated that "land power and air power are coequal and interdependent forces; neither is an auxiliary of the other."[27] Coequal status did not relieve air forces from the duty of supporting the ground campaign but rather integrated air and ground operations into a single campaign plan. Coequality enhanced rather than diminished the combat power of the air-ground team and was based on the lessons of North Africa:

> The gaining of air superiority is the first requirement of any major land operation. Air forces may be properly and profitably employed against enemy sea power, land power, and air power. However, land forces operating without air superiority must take such extensive security measures against hostile air attack that their mobility and ability to defeat the enemy's land forces are greatly reduced. Therefore, air forces must be employed primarily against the enemy's air forces until air superiority is obtained. In this way only can destructive and demoralizing air attacks against land forces be minimized and the inherent mobility of modern land and air forces be exploited to the fullest.[28]

FM 100-20 recognized that air superiority in the lethal, high-tempo combat of World War II was essential to the ground forces if they were to have mobility on the battlefield. American ground commanders understood the need for air superiority but chose an inappropriate method (the air umbrella) to achieve that objective. Air superiority is not an easy task for the air commander to achieve. Ground commanders did not understand that only an air campaign could defeat the enemy air forces. Nor did they understand that the flexibility of air power alone was not sufficient to allow them to accomplish all missions the ground commander wanted at the same time. These missions needed to be accomplished in a prioritized order:

> The inherent flexibility of air power is its greatest asset. This flexibility makes it possible to employ the whole weight of available air power against selected areas in turn; such concentrated use of the air striking force is a battle winning factor of the first importance. Control of available air power must be exercised through the air force commander if this inherent flexibility and ability to deliver a decisive blow are to be fully exploited. Therefore, the commander of air and ground forces in a theater of operations will be vested in the superior commander charged with the actual conduct of operations within the theater, who will exercise command of air forces through the air force commander and the command of ground forces through the ground force commander. The superior commander will not attach army air forces to units of ground forces under his command except when such ground forces are operating independently or are isolated by distance or lack of communication.[29]

FM 100-20 recognized that the flexibility of air power allows it to concentrate effort (the principle of mass), which enables it to deliver a decisive blow in time and space. To be decisive, air power must be concentrated on the mission to be accomplished. If several efforts are attempted simultaneously, air assets are dispensed piecemeal. This was true of the air umbrellas that tied portions of available air forces to the efforts of particular ground forces. To overcome this deficiency, FM 100-20 recognized that a priority of effort (defined as missions) was necessary:

The mission of the tactical air force consists of three phases of operations in the following order of priority:

(1) *First Priority*—To gain the necessary degree of air superiority. This will be accomplished by attacks against aircraft in the air and on the ground, and against those enemy installations which he [the enemy] requires for the application of airpower.

(2) *Second Priority*—To prevent the movement of hostile troops and supplies into the theater of operations and within the theater.

(3) *Third Priority*—To participate in a combined effort of the air and ground forces, in the battle area, to gain objectives on the immediate front of the ground forces.[30]

FM 100-20 did a superior job of defining *what* air power does to support the ground battle. Methods of *how* to accomplish these objectives were refined throughout the remainder of the war by individual theater commanders, but the doctrinal basis of *what* must be accomplished and in what order had been established.

More than establishing doctrine, FM 100-20 was a blueprint for victory. It established goals and set priorities against which assets could be allocated; it addressed operational art. FM 100-20 recognized air power's flexibility and its relationship to the requirement to employ mass as a principle of war. FM 100-20 accomplished this by defining a clear priority of missions, thus specifying that air forces cannot conduct all aspects of an air campaign concurrently. Priority of mission equated to mass of effort, which led to decisive application of combat power.

Truly, FM 100-20 meets the definition of doctrine stated earlier in this chapter. It was born of the experiences of war and it established a methodology to be followed to achieve victory, but it still allowed the flexibility for theater commanders to implement the doctrine against the realities of their combat environment.

FM 100-20 focused on *what* air power contributed to the theater of war. It did not address *how* to accomplish these tasks at the tactical level of war; it left that job to the tacticians. The next chapter compares modern tactical air forces doctrine to FM 100-20. Are our modern, awesome tactical fighter forces guided by the same clear, concise doctrine that was contained in FM 100-20?

## Summary

This chapter discussed the evolution of US tactical air forces doctrine. World War I was the first operational use of tactical air forces in the roles that have endured to the present. The World War I experiences established the best uses of aircraft in the tactical arena. War proved that the best use of pursuit aviation was the establishment of air superiority, which was the first mission necessary for the conduct of air operations. Once the air battle had been won, the air forces could isolate the battlefield; this was the

mission of attack and bombardment aviation. Attacks on the trenches on the front lines proved to be the most dangerous and costly mission.

Between the wars, air power advocates believed that technology had invalidated many of the lessons of World War I. Bombardment aviation became the major air arm, and the enemy's industrial capability—not his army—became the target of air power.

American ground commanders, continuing to hold to the World War I lessons of air power, believed that air power must support the ground forces by achieving air superiority and then cooperating with ground forces. Because air superiority was crucial to the ground commander, each commander required his own air support command for his unit's individual use.

The British experience was totally different. The Royal Air Force had become an independent service during World War I. Between the wars, British air control policy had used air power as the primary means of policing underdeveloped portions of the empire. This led to a doctrine that addressed cooperation of air and ground commanders as coequals. The American and British doctrines were tested in North Africa.

The North African experience proved the superiority of the British system. At the Casablanca Conference, the British system was adopted as the Allied air-ground support doctrine. This doctrine was formalized within the US Army by FM 100-20, *Command and Employment of Air Power*, which established the priority of missions necessary to conduct an air campaign. It identified *what* air support for ground forces entailed but left the methods of *how* to accomplish these objectives to the discretion of the theater commander.

The next chapter examines modern tactical air forces doctrine. Are the doctrinal precepts of FM 100-20 still contained in modern doctrine?

**Notes**

1. TACM 2-1, *Tactical Air Operations*, 15 April 1978, i.
2. AFR 23-10, *Tactical Air Command*, 14 April 1980, 1.
3. Joint Chiefs of Staff (JCS) Pub 1, *Department of Defense Dictionary of Military and Associated Terms* (Washington, D.C.: Joint Chiefs of Staff, 1 January 1986), 118.
4. AFM 1-1, *Basic Aerospace Doctrine of the United States Air Force*, March 1984, 1-1.
5. Maj Gen I. B. Holley, Jr., USAFR, Retired, "Of Saber Charges, Escort Fighters, and Spacecraft: The Search for Doctrine," *Air University Review* 34, no. 6 (September–October 1983): 4.
6. AFM 1-1, i.
7. Lt Col Stephen T. Rippe, USA, "An Army Air Force Issue: Principles and Procedures for AirLand Warfare," *Air University Review* 37, no. 4 (May–June 1986): 66.
8. Maj Michael L. Wolfert, USAF, "From ACTS to COBRA: Evolution of Close Air Support Doctrine in World War Two," Research Report 88-2800 (Maxwell AFB, Ala.: Air Command and Staff College, 1988), 47.
9. Ibid., 13.
10. Ibid.
11. Ibid., 4.
12. Ibid.

13. Ibid.
14. Ibid., 5.
15. Thomas H. Greer, *The Development of Air Power Doctrine in the Army Air Arm, 1917–1941* (1955; new Imprint, Washington, D.C.: Office of Air Force History, 1985), 111.
16. Ibid., 124.
17. Ibid., 125.
18. Lt Gen Lewis H. Brereton, *The Brereton Diaries: The War in the Air in the Pacific, Middle East and Europe, 3 October 1941–8 May 1945* (New York: William Morrow and Company, 1946), 7.
19. "Notes on Air Operations against Rommel in Egypt and Libya," *Command Informational Intelligence Series*, no. 43-7 (Washington, D.C.: Office of the Assistant Chief of Staff for Intelligence, 6 May 1943), 3.
20. Wolfert, 29.
21. Maj Gen Perry M. Smith, USAF, Retired, *The Air Force Plans for Peace, 1943–1945* (Baltimore and London: Johns Hopkins University Press, 1970), 30.
22. Wolfert, 33.
23. Ibid.
24. Lt Col David J. Dean, *Airpower in Small Wars: The British Air Control Experience* Report AU-ARI-CP-85-1 (Maxwell AFB, Ala.: Air University Press, April 1985), 3.
25. Wolfert, 38.
26. Greer, 47–49.
27. FM 100-20, *Command and Employment of Air Power*, 21 July 1943, 1.
28. Ibid., 1.
29. Ibid., 2.
30. Ibid., 10–11.

## Chapter 3

# Modern Tactical Air Doctrine

TACM 2-1, *Tactical Air Operations*, dated 15 April 1978, is the modern successor to FM 100-20. It describes the current doctrine for the employment of tactical air forces. There are many differences between TACM 2-1 and FM 100-20, and this chapter discusses several of these differences. A line-by-line comparison would be impractical and pointless. What must be contrasted is the way these manuals address *what* tactical air forces accomplish as opposed to *how* they accomplish their missions.

This chapter attempts to evaluate if TACM 2-1 addresses air power as operational art. Before investigating this issue, we must have a further understanding of the concept of operational art. Chapter 1 defined operational art as "the employment of military forces to attain strategic goals in a theater of war or theater of operations, and conduct of campaigns and major operations."[1] This concept is not new; it dates back to the Napoleonic era. The best description of these ideas is contained in "Lessons from the Past for the Present," a lecture by Col G. F. R. Henderson presented to the Royal United Service Institution (RUSI) in 1894. In this lecture, Colonel Henderson described the differences between operational art, minor tactics, and grand tactics.

Colonel Henderson first addressed the issue of minor tactics, which most closely parallels the present concept of tactics:

> Minor tactics are more or less mechanical. They may be called drill movements on the battlefield; they deal principally with material forces, with armament, fire, and formations; and their chief end is the proper combination of the three arms [infantry, cavalry, and artillery] upon the field of battle. . . . Minor tactics include the formation and disposition of the three arms for attack and defense, and concern officers of every rank.[2]

The important distinction of minor tactics is that they are mechanical in nature and can be learned through repetition or drill. For this reason, armies have devoted thousands of hours to minor tactics. Indeed, the basic soldierly skills are minor tactics. Minor tactics deal with the skills that can be studied and quantified. All military men are comfortable discussing and studying minor tactics. Now, let us contrast minor tactics with grand tactics:

> Grand tactics are far less stereotyped. They are to Minor Tactics what Minor Tactics are to drill, *i.e.*, the method of adapting the power of combination to the requirements of battle; they deal principally with moral factors; and their chief end is the concentration of superior force, moral and physical, at the decisive point. . . . Grand tactics, the art of generalship, include those stratagems, maneuvers, and devices by which

victories are won, and concern only those officers who may find themselves in independent command.[3]

Because grand tactics are operational art, they cannot be learned by rote or drill. Grand tactics involve balancing combat power at the decisive point in time and space. This decisive concentration requires maneuver to concentrate firepower at the precise place at the appropriate time. It involves the maneuver of formations throughout the theater, not simply along the battle front.[4] The nature of tactical air forces singularly qualify them to operate at this level of war. Only aircraft possess the mobility to conduct grand tactics on the modern battlefield because they can maneuver throughout the depth of the theater of operations. Notice that grand tactics deal with maneuver, not firepower. Other weapons (missiles, artillery, etc.) can deliver firepower throughout the theater, but only aircraft can maneuver. The question becomes, Does TACM 2-1 address grand tactics or does it concentrate on minor tactics?

## Tactical Air Operations

Chapter 1, Tactical Airpower, of TACM 2-1 states that "the mission of tactical air power is to deter the enemy from attacking and, should deterrence fail, to conduct war at the level of intensity and effectiveness needed to win."[5] Essential to the conduct of modern warfare is training because "effective methods of modern warfare are not known instinctively; they must be learned. We learn them by training the way we will fight."[6] Clearly, this mission statement addresses minor tactics. Operational art is neither easily anticipated nor trained for. In addition, TACM 2-1 still holds to the beliefs of the instructors at the Air Corps Tactical School that because aircraft can maneuver over the entire theater of war they alone can win wars.

Another reason for this belief is that tactical air forces are organized, equipped, and trained for quick response at all levels of conflict. "They may operate independently or in conjunction with land and sea forces in a coordinated effort to achieve objectives."[7] Doctrinal statements such as these evoke emotions and are a throwback to the strategic bombardment school. The lessons of war simply do not support the contention that aircraft alone can win wars. They may deploy alone, but they will be employed in concert with some other type of force. Tactical air forces may operate independently within a commander's campaign plan, but this must not be misconstrued as air power alone winning wars. It is time to lay such ideas to rest once and for all.

While TACM 2-1 maintains that air forces acting alone can win wars, it has lost one of the primary principles upon which FM 100-20 was based—prioritization of missions. It states that when faced with an enemy offensive air threat, a priority mission of tactical air forces is to defeat the enemy air effort. "At the same time, engaged surface forces must be provided close

air support at a level commensurate with the pace of their operations and the pressure exerted by enemy ground forces."[8] These are not the mission priorities that are clearly defined in FM 100-20.

As reported in chapter 2, FM 100-20 established a clear priority of air operations for the tactical air forces of World War II. TACM 2-1 not only abandons this priority system but also states that all missions of the tactical air forces will be accomplished at the same time: "Success in any armed conflict may require tactical air forces to perform counterair, close air support, and interdiction operations simultaneously with limited assets."[9]

What does TACM 2-1 state has changed that will allow the TAF to violate the priority system of FM 100-20? Will simultaneous application to all missions not violate the principle of mass? The answer lies in technology, particularly communications systems: "Command, control, communications, intelligence, and interoperability ($C^3I^2$) will provide the essential mechanism to integrate and employ forces."[10] Obviously, TACM 2-1 believes that technology serves as a force multiplier that allows simultaneous mission accomplishment without the violation of mass. The question is, Will this system work in the high-intensity environment of the 1990s and beyond?

Apparently the NATO nations do not have the same faith in technology. NATO's principle of employment is based on the belief that all missions cannot be accomplished simultaneously due to the reality of limited resources. As defined in Allied Tactical Publication (ATP)-27(B), *Offensive Air Support*, NATO's operational doctrine is based on gaining air superiority first. NATO plans to "gain and maintain air superiority first, to prevent the movement of enemy forces into and within the theater and to destroy these forces once in theater, and second, to assist in ground force operations through joint operations."[11] Why does NATO doctrine closely parallel the World War II doctrine of FM 100-20? As Air Marshal Sir Patrick Hine, commander of NATO's 2d Allied Tactical Air Force (2ATAF) has stated:

> The main tasks of my force in any major battle in the Central Region would be twofold: first counter-air operations, to do our best to prevent the enemy air force from attacking our ground troops and our air fields; and secondly offensive air support operations, to provide tactical reconnaissance, close support of the land battle and missions to interdict—to cut off—the battle area from enemy reinforcing units.[12]

NATO doctrine dramatically differs from TACM 2-1. Air Marshal Hine does not see NATO being able to carry out all tactical air missions simultaneously. This has led NATO to adopt a definite priority of operations in its campaign plan. Perhaps these doctrinal differences are due to theater-specific constraints and the realities of coalition warfare. However, there is another American force dedicated to providing tactical air power to ground forces—the Marine Corps. Let us examine Marine Corps doctrine in comparison to Air Force TAF doctrine.

## Marine Corps Doctrine

As contained in Navy-Marine Corps (NAVMC) Publication 2710, *Marine Air-Ground Task Forces (MAGTFs)*, the roles and missions of the Marine Corps are to "provide Fleet Marine Forces of combined arms for service with the fleet; and perform such other duties as the President may direct."[13] The Marine Corps is responsible for developing the nation's amphibious strategy that supports national and maritime strategies. In developing amphibious policy, the force structure of the Marines must be such that "strategic and tactical mobility is preserved by lightly equipped Marine forces which are manpower intensive in comparison with other conventional forces."[14]

To augment this light configuration, the Marine Corps is functionally configured as a Marine Corps air-ground task force. The MAGTFs are "combined-arms forces consisting of ground, air, and combat service support forces, under the direction and control of a single commander."[15] Of these supporting elements, the MAGTF is most dependent on its aviation support element. Why the Marine Corps is so dependent on its air assets can best be understood within the context of firepower, mobility, and aviation-unique support:

> *Firepower.* Since heavy, ground-based firepower is often reduced to facilitate transportability, the aviation combat element provides the offset. . . .
>
> *Mobility.* Aviation forces assist in the rapid buildup of combat power ashore. . . . Unencumbered by ground trafficability considerations, the aviation combat element enhances the battlefield mobility of the Marine air-ground task force by allowing the ground force to rapidly mass at the precise time and place.
>
> *Aviation-Unique Support.* Unique characteristics of aviation offer capabilities to the Marine air-ground task force that would otherwise be denied. . . .[16]

The Marine Corps force structure is heavily dependent on air support. Many so-called experts equate this dependence to a Marine Corps dedication solely to close air support of Marine ground forces. Examination of Marine Corps doctrine disproves this belief. In reality, the Marine aviation combat element doctrinally supports the air-ground task force by accomplishing six functions:

> *Antiair warfare* enables the Marine air-ground task force to achieve and maintain control of the airspace over the battlefield.
>
> *Offensive air support* provides the Marine air-ground task force with responsive firepower at the required time and place.
>
> *Assault support* allows the movement of troops, equipment, and supplies across the battlefield by aviation platforms.
>
> *Air reconnaissance* serves the Marine air-ground task force with tactical intelligence capability through visual, photographic, and electronic means.
>
> *Electronic warfare* identifies, exploits, and reduces or prevents adversary use of the electronic spectrum.
>
> *Command and control* is essential to achieving full integration and effective/efficient utilization of the Marine air-ground task force's aviation assets.[17]

Take note that these are the same functions performed by the Air Force for the Army under TACM 2-1. Marine Corps antiair warfare equates to Air Force air superiority. Marine offensive air support is subdivided into close air support, deep air support, and long-range air interdiction. These missions parallel the Air Force missions of close air support, battlefield air interdiction, and air interdiction. Doctrinally, the Marine Corps defines *how* to support ground forces in the same fashion as TACM 2-1. The difference in Marine Corps and Air Force doctrine lies in what order missions will be accomplished.

Many authorities believe that the Marine Corps is totally committed to providing its ground forces with close air support from day one of the war by ignoring all other air support missions. In 1948 the Key West Agreement (of which more will be said later) specifically allowed the Navy to retain the Marine Corps and gave the Navy the authority to provide close air support for Marine land operations. The question is, Will the Marine Corps and Navy air arms provide all air missions simultaneously or do they accept the need for a priority of mission accomplishment? To answer this question, one must analyze the employment doctrine of the Marine Corps.

The Marine Corps prepares to employ the MAGTF during wartime in two situations. The first is the amphibious assault, which is the traditional and primary mission of the Marine Corps. A second method of employment for the MAGTF is in joint operations with one or more of the other services. Let us examine how the MAGTF will be employed in the amphibious assault and in joint operations.

According to section II, "Air Operations Prior to Amphibious Operation" of Marine Corps Operational Handbook (OH) 5-1.1, *Command and Control of USMC TACAIR*, the objectives of preassault air operations are "to gain information: *to gain air superiority; to isolate the objective area* [emphasis added]; to reduce hostile defenses, and disrupt the enemy's lines of communications and morale."[18] This doctrine is analogous to that contained in FM 100-20. Prior to the amphibious assault, the enemy air force must be cleared from the sky and the battlefield must be isolated. Doctrinally, the Marine Corps recognizes the need for a prioritized campaign before the Marines can hit the beach. Achievement of air superiority and battlefield isolation prior to the assault allows the Marine Corps to devote mass to close air support when it is necessary. Marine Corps doctrine reflects the lessons of World War II and FM 100-20 in the amphibious assault. Are these priorities different in joint operations?

The command of Marine Corps tactical air assets in joint operations has been a subject of political debate within the Joint Chiefs of Staff since the early stages of the Vietnam conflict in 1965. After years of debate, the chairman of the Joint Chiefs concluded an agreement in March of 1981 governing the command and control of Marine Corps fixed-wing tactical aircraft:

> The Marine Air-Ground Task Force (MAGTF) commander will retain operational control of his organic air assets. *The primary mission of the MAGTF air combat element is the*

*support of the MAGTF ground element* [emphasis added]. During joint operations, the MAGTF air assets will normally be in support of the MAGTF mission. The MAGTF commander will make sorties available to the joint force commander, for tasking through his air component commander, for air defense, long-range interdiction, and long-range reconnaissance.[19]

In joint operations, the MAGTF's primary mission is support of the MAGTF ground element because the ground element's light force structure makes firepower support essential. However, the nature of this agreement makes it plain that the MAGTF cannot accomplish all missions simultaneously. If the MAGTF is committed to battle before air superiority and battlefield isolation have been achieved, the MAGTF is dependent on other services to accomplish these missions while they support the ground element. Many experts point to this doctrine as Marine air's total dedication to close air support; in reality, it is a realization that the MAGTF is not configured to accomplish all ground support missions simultaneously.

Marine Corps doctrine and NATO doctrine both recognize the requirement to prioritize the air effort within the campaign plan. This doctrine is in agreement with the FM 100-20 of World War II vintage. Only TACM 2-1 states the belief that simultaneous application of tactical air assets can be accomplished. Let us now turn to how TACM 2-1 will apply air power.

## Centralized Control, Decentralized Execution, and Force Multipliers

The foundation of how TACM 2-1 employs tactical air assets is the principle of centralized control-decentralized execution:

> The Air Force Component Commander (ACC) is responsible for the entire battle area which is subject to the capabilities of his force—in today's terms, this typically means a theater of operations. He must be able to *mass and concentrate his forces* [emphasis added] at the proper location, at the proper time, in the proper numbers to counter the threat. This ability to shift, deploy, and redeploy as the situation dictates, is "centralized control." However, because of the scope of the air operation and the variety of missions to be performed, a commander cannot effect the detailed planning and execution of his forces. He therefore delegates detailed mission tasking, planning and execution to subordinate echelons. This is "decentralized execution."[20]

Implicit in the concept of centralized control-decentralized execution is flexibility. For the system to work, tactical air forces must have equipment that allows them to conduct many different missions. Through centralized control, the ACC establishes the missions to be accomplished by subordinate commanders. Decentralized execution of flexible assets allows subordinate commanders to configure and execute their forces to meet those objectives. The merit of this system, according to TACM 2-1, is that it fuses centralized control-decentralized execution with a modern $C^3I^2$ system. "In other words, responsive command and control makes the total

force greater than the sum of its parts—it is a force effectiveness multiplier."[21]

Is this really true? Can an efficient command and control system produce more mass than is otherwise possible or actually exists? Does history provide any examples that support this contention? To answer these questions, one needs to understand the flexibility of tactical air power.

In his paper "The Fabric of Air Warfare Doctrine, Operational Experience, and the Integration of Strategic and Tactical Air Power from World War I through World War II," Dr James A. Mowbray cautions commanders regarding an overreliance on flexibility as a cure-all for force structure deficiencies:

> Perhaps one of the most important things that can be learned from that experience [the study of the history of air power], however, is that the flexibility of air power is a proverbial two-edged sword. It is not only the greatest attribute of air power, but it is also potentially the greatest liability—when misunderstood and misused, as by the theater commander. The defect is that in the face of crisis the theater "boss" may turn to his most flexible weapon, air power, and take any or all of it for use in the crisis of the moment. And any commander faced with a crisis might use any part of air power to which he can gain access, to the point that flexibility so misused equates to dispersion of effort.[22]

Flexibility has other pitfalls. Tactical air forces can accomplish several different kinds of missions, but the attrition factor varies. Simply, as indicated in chapter 1, aircraft losses will be commensurate with ground force losses attempting the same form of maneuver. As the Israeli experience in the Yom Kippur War indicates, frontal assaults by aircraft can be quite expensive. Unless commanders forecast the force structure they need in the future, and factor this into their mission allocation today, they may not have the forces necessary to accomplish their campaign plan.

Another pitfall of flexibility is specialization. By fiscal year 1990, the United States will have 35 wings of tactical fighter aircraft. Of the 35, three wings will be A-7s and six wings will be A-10 aircraft. These aircraft are specialized to accomplish the close-air-support mission and have little capability in the air-superiority and air-interdiction missions. The result is that one fourth of TAF's assets are not flexible; they are specialized to perform a single mission. Can a doctrine based on flexibility and decentralized execution operate with one quarter of the force capable of only a single mission?

This mismatch of force structure and doctrine could have devastating effect in a major conflict. These conflicts are aggravated by TACM 2-1's conviction that a priority of missions is not necessary and that all missions can be accomplished simultaneously. TACM 2-1 may be leading both air and ground commanders to rely too heavily on the flexibility of the TAF. This problem is intensified by the system used to distribute TAF assets to missions.

## Apportionment and Allocation System

To understand how tactical air forces are allocated, we must differentiate between the primary missions of the TAF and the air tasks that are a subset of those missions. TACM 2-1 defined the primary missions of the TAF as counterair (consisting of both defensive and offensive counterair), air interdiction, close air support, tactical airlift, air reconnaissance, and special air operations. To be successful, these missions require that certain air tasks be performed. Air tasks run the spectrum from the relatively simple to the extremely complex. The offensive counterair mission, for example, includes the air tasks of attack, fighter sweep, combat air patrol, and air escort. Conversely, close air support incorporates only two air tasks: attack and column cover.

The process that matches numbers of aircraft sorties available with the Army's need for support is the apportionment and allocation system. TACM 2-1 states that the theater level determines the air apportionment, which is the division of total air capability among the air tasks to be performed during a specific period of time. The apportionment process demands that certain information be made available to the commander in gross terms—the plans of the ground force, analysis of the current enemy situation/threat, availability of friendly forces, and the resultant force requirement. "These considerations determine how and where the total air forces will be applied across the battle area."[23]

The definition of apportionment calls into question *what* it is meant to accomplish. Under TACM 2-1, total air capability is not apportioned to missions but rather to the subsets of air tasks. Considering that FM 100-20 contained a priority system based on three missions, TACM 2-1's apportionment process to the air task level seems ambitious and risks diluting the focus of the air effort through micromanagement.

A second paradox of the apportionment process is its concentration on *how* and *where* air forces will be applied across the theater. The purpose of centralized control-decentralized execution is to mass and concentrate forces at the proper location, at the proper time, and in the proper numbers to counter the threat. These goals would be best served by apportionment on the basis of *what* and *when* rather than on *how* and *where*.

*How* and *where* air assets are applied connotes a reaction to the enemy's movements. *What* and *when* would indicate a proactive orientation toward driving the enemy force to react. This argument may seem more verbalization than real; however, to function correctly, doctrine must be precise in its language. This precision is essential as these directives move down the chain of command. Let us look at the next level—the component level, where allocation takes place.

"The component level is responsible for the conduct of air operations within the apportionment and *the objectives of the Joint Force Commander* [emphasis added]."[24] It is based on these apportionment percentages, as

prescribed by the joint force commander, that the available air power is assigned to specific air tasks for a specific period of time.

Again, the objectives of the joint force commander are conveyed by *what* and *when*, not *how* and *where*, air assets will be applied. If units are to have *Auftragstaktik*—a German army term for the ability of units to respond independently within the commander's intent to a changed tactical situation—that intent must be precisely conveyed. This precise guidance is essential for the apportionment to be correctly allocated and executed. The allocation commands the next level: the execution and control level. This level translates the general tasks and allocations given by the component level into detailed plans and orders and controls their execution. Here decentralized execution is operative. "The activities at this level require combat information in greater detail but with less scope than at the more senior levels. *Target by target* information requirements are not unusual [emphasis added]."[25]

There is another facet to this system which takes place on the ground side of the command structure. The ground force commanders dispense the air assets that have been allocated for their use to support subordinate units. This process of distribution marries close-air-support sorties to targets nominated by individual ground units through the fire-support network.

Here lies the main problem with present tactical air doctrine. The apportionment and allocation system is designed to convey *how* and *where* to attack targets. The distribution of air assets to individual ground units allows those units to identify the targets to be attacked. Target servicing becomes the emphasis in this doctrinal process. This is a clean, precise mathematical methodology for doctrinally controlling war. With probability and statistics, allocation can be reduced to the numbers of targets to be attacked by numbers of aircraft to get the desired percentage of destruction. This process sounds very scientific. In reality, targets, which exist only at the tactical level of war and are a product of the enemy's actions, drive the system. Overemphasis on numbers of targets and attempts to distribute limited assets among all the supported units could equate to the modern equivalent of the "penny packets" of North Africa in World War II.

Clearly this is an attempt to reduce grand tactics to minor tactics. Why? Because the latter is more comfortable, more quantifiable. Quantifying the number of targets to hit is simple. It is much harder to quantify what the attack of those targets will contribute to the success of the campaign plan. This problem will become more complex as technology allows commanders to look deeper and therefore find more targets to attack. The system will become more reactive, not proactive, with more targets being identified by more ground units.

Centralized control-decentralized execution and the apportionment and allocation system are not incorrect in themselves but rather open commanders to a possibility of overusing the flexibility of air power. These systems and principles are not unique to the Air Force. Both the Marine

Corps and NATO use this doctrine to manage tactical air assets. In fact, these principles are common to most of the free world's tactical air forces. If, however, a commander relies on these systems to do more with less, the air effort can be spread too thin. What, then, is the solution to this problem?

The beauty of FM 100-20 was its establishment of priorities. The mission priorities of air superiority, isolation of the battlefield, and close cooperation with ground forces focused commanders on grand, not minor, tactics. Given these priorities, air commanders found the enemy's center of gravity and focused their efforts on that center—the enemy's *Schwerpunkt.* The focus was on the enemy's intentions, not on the targets that he presented. Such guidance is needed today.

Success in war demands that the focus be on the enemy's center of gravity. Tactical air missions must be allocated against the joint force commander's analysis of the enemy's center of gravity. To accomplish this, the joint force commander must approach the air campaign with priorities of effort. To do otherwise is to violate the principle of mass and misuse the flexibility of tactical air power. Unfortunately, *until doctrine eliminates the idea of airplanes servicing targets as the primary role of tactical air power, we will never understand air power as grand tactics and operational art.*

Does this problem really exist? Ponder these words of Air Marshal Sir Patrick Hine, commander of NATO's 2ATAF:

> One does not buy an expensive aircraft like the Harrier to *kill tanks* one at a time in the forward area, except in an emergency. The Harrier's main role is to hit the enemy ground forces further back where they are not deployed for battle and thus present more *concentrated targets,* and where our relatively low-speed helicopters would be vulnerable to enemy air defense weapons and small arms fire [emphasis added].[26]

Minor tactics and the tactical level of war address *how* and *where* we kill tanks (or anything else). Doctrine must address the operational level—*what* constitutes the enemy's center of gravity. That is operational art. Lamentably, this fixation with *how* has translated into *how many*—the desire to reduce warfare to an attrition equation.

## Numbers Warfare

To begin our discussion of numbers warfare, let us examine a portion of an article that appeared in *Armada International* in December 1985:

> In a scenario subjected to system analysis in Switzerland a fighter-bomber fleet made up of 195 ground-attack Hunters was deployed against enemy tank units which had broken through. . . . The results showed that within one week the Hunters accounted for approximately 40% of the "Red" tank losses. During this time they lost about half their strength. . . . During the so-called "Ansbach trials" in the FRG [Federal Republic of Germany] units of Leopard I [tanks] protected by AA units were pitted in an exercise area of 40x30 km against AH-1G Huey Cobra anti-tank helicopters which were directed unto their targets by OH-58A Kiowa observation helicopters. The trials . . . resulted in an average overkill ratio of 18:1 in favour of the helicopters. Against the Warsaw Pact the estimated overkill ratio in favor of the rotary wing aircraft is 12–18:1.[27]

These so-called combat trials focus on firepower, force-on-force scenarios. Has the system of allocation and apportionment led modern tacticians to judge the merit of weapon systems only by their attrition ratios? A second example of numbers warfare was reported in the 2 June 1987 issue of the *Journal of the Royal United Services Institute for Defense Studies*:

> It was assumed that it would be necessary for NATO's ground-attack aircraft to target 50 percent of all fixed air defense systems in Central Europe together with all known WTO [Warsaw Treaty Organization] air force command and control facilities and some 220 air force bases. . . . To make an immediate contribution to the land battle it further seemed appropriate to target some 150 Corps and Divisional Headquarters. Multiplying the number of targets by the number of munitions deemed needed to destroy each one gives a total of 18,000 DGZs [designated ground zeros], and this is the amount that the Allies would have to try to achieve.[28]

This tendency toward numbers warfare is explained by Benjamin S. Lambert, a senior staff member of the Rand Corporation, who notes that Air Force planning assessments too often "look solely to the technical aspects and size of the enemy's forces, without much thought given to considerations of context or to the enemy's operational skill that will govern how, with what effect, his technical effects might perform in combat."[29] Lambert contends that this error in Air Force planning leads to a propensity to confuse enemy force size with enemy strength.

Lambert further attests that "this fixation on force size as the most important ingredient of enemy capability is a classic case of bookkeeping masquerading as analysis."[30] The result, he contends, is the mistaken impression that "war is merely a firepower equation writ large and that favorable asymmetries in the numbers balance can automatically be traded for battlefield gains."[31]

According to Maj Gen Jasper Welch, Jr., such pseudoanalysis leads to programs being tied "far too closely to the presumption that only one class of targets is important (tanks), located only in one place (as far to the enemy's rear as feasible), and to be attacked as early as possible."[32]

This is the allocation and apportionment doctrine contained in TACM 2-1 carried to the extreme. Operational art and grand tactics cannot be reduced to numbers of munitions per target or required numbers of ground zeros. Current tactical air force doctrine leads to this type of analysis. TACM 2-1 overlooks *what* air power is meant to accomplish.

John A. Warden III, in his book *The Air Campaign: Planning for Combat*, describes what numerical relationships are important at the operational level:

> Loss rates vary disproportionately with the ratio of forces involved. Two forces equal in numbers (and reasonably close in equipment and flying capability) will tend to have equal losses when they meet. Keeping the same equipment and personnel, as the force ratios go against one side, that side will have greater loss rates than the changed ratio would suggest. . . . *The change in loss rates, either positive or negative, is not linear: it is exponential* [emphasis added]. Furthermore, no point of diminishing

returns for the larger force seems to exist. That is, the larger the force gets, the fewer losses it suffers, and the greater losses it imposes on its opponent.[33]

This is what the apportionment and allocation system is intended to achieve. TACM 2-1 is intended to use the flexibility of tactical aircraft to create the force ratios described by Warden. This is grand tactics and operational art. However, in the application of the doctrine contained in TACM 2-1, with the enemy target set as the central focus, we have slipped into a misuse of the allocation and apportionment system. Let us examine some examples that support this contention.

Col Sam Wilder, USA, in a presentation to the USAF Tactical Air Conference conducted 14–16 March 1989 at Langley AFB, Virginia, described the actual apportionment of TAC air assets in several large exercises. During Exercise Ulchi Focus Lens 1988 (a major joint and combined exercise conducted annually in the Republic of Korea), three field armies were employed in an attack portion of the exercise. One of the three armies was to conduct a main attack to the enemy center and then execute a turning movement. The other two armies were to conduct minor attacks to hold enemy forces to their front. The apportionment of close-air-support assets to the three armies was 30 percent, 35 percent, and 30 percent. The army conducting the main attack received only 5 percent more CAS assets than the other two armies.[34] Clearly, mass of effort was not distributed to the main effort. Instead, all armies received equal effort—a misuse of the flexibility of TAF assets.

Another example cited by Colonel Wilder occurred in Europe. During a NATO exercise in the North Army Group, Central Europe (NORTHAG) area, the Third US Corps conducted a counterattack against an enemy army group that had broken through the NATO lines. Only 30 percent of the CAS apportionment was distributed to Third US Corps, though clearly *what* that corps was accomplishing was the highest priority operation being conducted.[35] Obviously, both our tactical thinking on what is important and our operational employment of forces are being corrupted by a misuse of the doctrine contained in TACM 2-1. The next chapter explores why this has happened.

## Summary

This chapter examined the current state of tactical air force doctrine. Current Air Force tactical air doctrine is contained in TACM 2-1, which asserts that all tactical missions and air tasks can be accomplished simultaneously because of the capability of $C^3I^2$ systems as a force multiplier.

Current NATO and Marine Corps tactical air doctrines hold that the air campaign must be accomplished by a priority of missions. Much like FM 100-20, these doctrines see the need to first establish air superiority before other missions can be accomplished.

TAF, NATO, and Marine Corps doctrines use the same principles to execute the air campaign. All three count on centralized control-decentralized execution and a system of allocation and apportionment to match air assets to air tasks. The danger of this system is that the focus can be on *how* and *where* targets appear rather than on *what* the campaign requires and *when* the assets can be massed against that effort. An offshoot of this doctrine is that computer models of future wars are based on attrition models—matching assets to targets.

To be successful, air power must be integrated into the ground commander's scheme of maneuver, not simply into the fire support plan of the ground commander. The distribution of air assets must not violate mass in the interest of support for all units. Proper integration requires prioritization of effort. This integration is only possible if both air and ground commanders reevaluate the lessons of history. As chapter 1 illustrated, successful campaigns integrate air and ground assets into a scheme of maneuver that takes advantage of the best capabilities of both forces. This integration is most essential on the highly mobile, nonlinear battlefield envisioned by Army FM 100-5. The next chapter investigates the nature of the future battlefield.

**Notes**

1. Field Manual (FM) 100-5, *Operations*, 5 May 1986, 10.
2. Quoted in *Old Look-New Subject: The Operational Level of War* (Carlisle Barracks, Pa.: US Army War College, April 1986), 8.
3. Ibid., 8.
4. Ibid., 9.
5. TACM 2-1, *Tactical Air Operations*, 15 April 1978, 1-1.
6. Ibid.
7. Ibid.
8. Ibid., 1-2.
9. Ibid., 1-3.
10. Ibid., 1-3, 1-4.
11. Allied Tactical Publication (ATP)-27(B), *Offensive Air Support* (North Atlantic Treaty Organization Military Agency for Standardization: Headquarters NATO, 15 November 1983), 1-1.
12. Quoted in Alfred Price, *Air Battle Central Europe* (New York: The Free Press, 1986), 4.
13. Department of the Navy, NAVMC 2710, *Marine Air-Ground Task Forces (MAGTFs)* (Washington, D.C.: Government Printing Office, 1985), 2.
14. Lt Gen Keith A. Smith, "The Posture of Marine Aviation in FY88–FY89," *Marine Corps Gazette*, May 1987, 47.
15. NAVMC 2710, 2.
16. Smith, 47.
17. Ibid.
18. Operational Handbook (OH) 5-1.1, *Command and Control of USMC TACAIR* (Quantico, Va.: Marine Corps Development and Education Command, 1982), 2-1.
19. Ibid., 1-1, 1-2.
20. TACM 2-1, 3-2, 3-3.

21. Ibid., 3-3.

22. James A. Mowbray, "The Fabric of Air Warfare Doctrine, Operational Experience, and the Integration of Strategic and Tactical Air Power from World War I through World War II" (paper presented to the Air Power Symposium, Department of Aerospace Doctrine and Strategy, Air War College, Maxwell Air Force Base, Alabama, 2–4 March 1988), 2.

23. TACM 2-1, 3-4.

24. Ibid.

25. Ibid.

26. Price, 20.

27. Konrad Alder, "The Airborne Threat to Mechanized Units," *Armada International* 9, no. 8 (December 1985): 119.

28. John Clements and T. S. Mann, "Is There a Future for Ground Attack?" *Journal of the Royal United Services Institute* 132, no. 2 (June 1987): 35.

29. Benjamin S. Lambert, "Pitfalls in Force Planning: Structuring America's Tactical Air Arm," *International Security*, Fall 1985, 91–95.

30. Ibid.

31. Ibid.

32. Maj Gen Jasper Welch, Jr., USAF, "DOD's Interdiction Program: The End of the Beginning," *Armed Forces Journal International* 121 (May 1984): 118.

33. John A. Warden III, *The Air Campaign: Planning for Combat* (Washington, D.C.: National Defense University Press, 1988), 70–71.

34. Col Sam Wilder, USA, "Employment of Tactical Air Power," lecture, USAF Tactical Air Conference, Langley AFB, Va., 14–16 March 1989.

35. Ibid.

## Chapter 4

# Post-World War II Pressures on Tactical Air Doctrine

Field Manual (FM) 100-20, which contained the tactical air doctrine that was successful in World War II, established a priority of missions for the air campaign. That priority was air superiority first, isolation of the battlefield second, and close cooperation with ground troops third. This doctrine was discussed in chapter 2. There was nothing sacred in this order of accomplishment and, as pointed out in chapter 1, the order of these priorities was changed during the Battle of the Bulge as the situation warranted. The essential concept of FM 100-20 is that a priority of effort must be established and maintained during an air campaign.

TACM 2-1 contains the current tactical air doctrine. Under this doctrine, all tactical air missions will be conducted simultaneously. The process of dispersing air assets to these missions is called the allocation and apportionment system, and the process of giving these sorties to the support of particular ground units is the distribution system. Both were discussed in chapter 3.

It is interesting to note the difference in force structure available to implement the doctrine of FM 100-20 and TACM 2-1. During the post-invasion period of World War II, tactical air force assets were available in numbers impossible to obtain today. Yet, the doctrine of FM 100-20 held that priority of missions was necessary to concentrate effort and to be faithful to the principle of war known as mass.

Today the total number of US tactical aircraft stands at around 4,000. These numbers fall far short of the tens of thousands of fighter-bombers, medium bombers, and strategic bombers available to support the ground forces of World War II. Yet, with many less aircraft available, TACM 2-1 holds that all tactical air missions can be accomplished simultaneously. The operational basis for this belief is the increased capability of tactical fighters and the command, control, communications, intelligence, and interoperability ($C^3I^2$) system that controls them. In essence, technological advancements again have made the lessons of war no longer operative. What has occurred in the postwar era to lead to these conclusions?

## The Politics of Close Air Support

As discussed in chapter 2, the Royal Air Force became a separate, independent service during World War I. The Army Air Corps did not evolve

into a separate service until after World War II. It was not until 26 July 1947, with President Harry S Truman's signing of the National Security Act of 1947, that the United States Air Force was established as a separate service. In addition to the independence of the Air Force, the act set forth detailed roles and missions for all military services.

President Truman attempted to further concentrate the roles and missions of the separate services in Executive Order 9877. Unfortunately, conflicts in the language used in the order and in the National Security Act of 1947 led to confusion in the stated service functions contained in the two documents, the key language differences being over Navy and Air Force responsibilities for air missions.[1] To resolve these problems in interpretation, Secretary of Defense James V. Forrestal met with the service chiefs at Key West Naval Base, Florida, in March 1948. This meeting led to the publication of "Functions of the Armed Forces and the Joint Chiefs of Staff," a document that has come to be commonly known as the Key West Agreement.

The Key West Agreement established a radically new military structure for the United States. It attempted to establish three separate services with primary and collateral functions, *none of which resulted in a duplication of effort.* The driving factor was not the lessons of World War II but the scarcity of money in the postwar demobilization. The establishment of collateral functions was meant to eliminate the necessity of each service having all capabilities. The collateral functions of each service amounted to a pledge by each service "to carry out certain functions to assist the primary missions of the other services."[2] The Army and Air Force would cooperate with each other as a team on joint operations. "Specifically, this meant that the Air Force pledged to provide the Army with airlift and close air support."[3] Close air support (CAS) was defined as a collateral function.

Regrettably, this spirit of cooperation did not develop. Carl W. Borklund, in his book *The Department of Defense*, characterizes the nature of the interservice rivalries that developed:

> In general terms, during all these squabbles, where separate service functions and combat capabilities supposedly interlocked, the tendency was to neglect those links. Where the weapon system had glamour and could command or attract large amounts of budget appropriations, each service concentrated on it, especially if the weapon function was to deliver an atomic warhead. The emphasis was on competition, rather than on complementary efforts toward a common combat capability goal.[4]

These battles over military service turf led Congress to enter the controversy. Congress attempted to legislate the proper relationships and force structure of the services by passing modifications to the Key West Agreement. The extent of this effort is impressive. There have been 10 clarifications of the Key West Agreement since 1947, six of which have involved the aviation support provided to the Army by the Air Force. Of greater significance is the disruption these changes have caused in the Army/Air Force relationship. Since 1948 CAS has been the subject of at least 22 official Army/Air Force field manuals, conferences, and memorandums of agree-

ment.[5] Let us examine the history of these clarifications of the Key West Agreement.

The first clarification of the Key West Agreement occurred 2 October 1951. A memorandum of understanding known as the Pace-Finletter Agreement after the two service secretaries (Secretary of the Army Frank Pace, Jr., and Secretary of the Air Force Thomas K. Finletter) who negotiated it, sought to clarify a phrase in the National Security Act of 1947 that authorized the Army to include land combat, service forces, "and such aviation . . . as may be organic therein." Pace-Finletter defined these aviation assets as those that could be utilized by the Army within its combat zone, which was limited to between 50 to 75 miles in depth.[6] A second restriction placed on the Army by this agreement was the nonduplication clause. The functions of Army aircraft *could not duplicate the functions of Air Force aircraft.*

The following year, a second Pace-Finletter Agreement officially known as the *Memorandum of Understanding Relating to Army Organic Aviation, November 4, 1952,* made more modifications to the capabilities of aircraft assigned to the Army. First, the combat zone was redefined as normally extending from 50 to 100 miles in depth. Second, Army fixed-wing aircraft were restricted to an empty weight of not more than 5,000 pounds.[7]

In 1954, DOD Directive (DODD) 5100.1, *Functions of the DOD and Its Major Components,* again restated the central issue of the Key West Agreement as to the independent status of the services. CAS, however, was no longer a collateral task but was elevated to an Air Force mission.

In 1956 another clarification of the Key West Agreement was necessary. *Memorandum for Members of the Armed Forces Policy Council, 26 November 1956,* again reaffirmed the 5,000-pound restriction on Army fixed-wing aviation. A separate section of the memorandum titled "Air Force Tactical Support of the Army" allowed the Army to develop surface-to-surface missiles for use against tactical targets not more than 100 miles beyond the front. Other tactical air support functions were to remain the responsibility of the Air Force.[8] Even with these clarifications of the Key West Agreement, the Army and Air Force continued to disagree over their roles and missions. Additional clarifications or modifications soon became necessary.

The Pace-Finletter Agreement was superseded in 1957 by DODD 5160.22, *Clarifications of Roles and Missions of the Departments of the Army and the Air Force Regarding the Use of Aircraft,* 18 March 1957. This directive blocked the Army's attempts "to acquire a close-support plane by asking that an Italian model, the G-91, be assigned to NATO."[9] Again the Army was denied aircraft heavier than 5,000 pounds and was "expressly prevented from providing its own close air support and strategic or tactical airlift."[10] This directive was later canceled on 8 March 1971 because of the unrealistic nature of the 5,000-pound limit imposed on the Army.

In 1959 the Air Force received total responsibility for the CAS mission. Joint Chiefs of Staff (JCS) Pub 2, *Unified Action Armed Forces,* assigned the

Air Force responsibility for providing CAS aircraft and for developing doctrine and procedures for CAS.[11]

The increasing involvement of US forces in Southeast Asia began to intensify the CAS debate. In 1963 the Army–Air Force CAS boards recommended joint requirements for conducting the CAS mission and approved the concept of a multirole CAS aircraft. These recommendations were approved by the chief of staff and the secretary of the Army. In 1965 the Army and Air Force chiefs of staff signed the "Concept for Improved Joint Air-Ground Coordination." This joint agreement established direct air support centers (DASCs) located at the Army corps level, placed tactical air control parties (TACPs) with all Army maneuver battalions, and established an immediate/preplanned CAS request communication net.[12]

At this point, the intensifying Vietnam conflict shifted the focus of the CAS controversy. Previous CAS controversies had centered on the use of fixed-wing aircraft; now a new technology entered the stage—rotary-wing aircraft.

The nature of the Vietnam conflict drove the Army to rely heavily on the use of helicopters. *Agreement between the Chief of Staff, U.S. Army, and Chief of Staff, U.S. Air Force, 6 April 1966*, also known as the Johnson-McConnell Agreement (after Gen Harold K. Johnson and Gen John P. McConnell, chiefs of staff of the Army and Air Force, respectively) sought an accord on the use of these rotary-wing aircraft. Under this agreement, the Air Force relinquished all claims to helicopters and follow-on rotary-wing aircraft that are designed for and operated in "intra-theater movement, fire support, supply and resupply of Army forces."[13] In exchange, the Army gave up its CV-2 (Caribou) and CV-7 (Buffalo) fixed-wing aircraft and any future fixed-wing aircraft designed for tactical airlift.

In February 1967 the JCS requested that the Air Force chief of staff develop a joint doctrine for planning and conducting CAS. When little progress was made in this area due to service differences of opinion, the deputy secretary of defense undertook a series of studies on the subject of CAS. Phase 1 of the CAS study was conducted in 1971 and investigated roles, missions and platforms used to conduct CAS. The CAS phase 2 study was conducted in 1972 by the secretary of defense. CAS phase 2 focused on command and control, and this study raised the issue of response time in support of ground troops. In 1973 a series of close-air-support tests were conducted at the JCS level.[14] One of the recommendations from these CAS studies was that the Army be given the A-10 CAS aircraft.

In 1975 the Army chief of staff, in his close-air-support memo to the deputy secretary of defense, rejected the A-10 proposal made by the secretary of defense. In this memo the Army chief of staff rejected assignment of A-10 units to the Army corps because "the ground commander will be unable to manage effectively the assets he might be assigned."[15] To further clarify this position, an Army/Air Force chiefs of staff letter was prepared in 1976 "supporting Air Force centralized control of CAS assets and their execution through the Air-Ground Operations System."[16]

Further changes helped clarify the Key West Agreement. *Memorandum of Agreement on U.S. Army-U.S. Air Force Joint Development Process, 22 May 1984*, concluded between the Army/Air Force chiefs of staff, contained 31 initiatives intended to establish a joint forces development process. The goal of this process was to provide an affordable total force that would maximize "joint combat capability to execute airland combat operations."[17] Some of the key issues resolved by this agreement were:

- High priority in the Army and Air Force development and acquisition process for programs supporting joint airland combat operations.
- Annual exchange between the Army and Air Force of a formal priority list of those sister service programs essential to the support of their conduct of airland combat operations . . . to ensure the development of complementary systems without duplication.
- Dedication to providing the best combat capability to the unified and specified commanders.[18]

The revolutionary nature of this agreement has not been recognized. Under the 1984 agreement, both the Army and Air Force again affirmed that the support of ground forces encompasses much more than close air support. The nature of the AirLand Battle makes operations close, deep, and in the rear equally essential to success for ground forces. After almost 40 years of focus on the CAS aspects of the Key West Agreement, the Army and Air Force in this 1984 agreement placed the focus back on the lessons of World War II. The agreement also specified the implementing structure for this radical change as it focused on the Army defining tactical air support requirements for the battlefield and left the means for supporting them to the Air Force.[19]

Congressional leaders are still not satisfied with this arrangement. The CAS amendment of Sen Alan J. Dixon (D-Ill) to the Goldwater-Nichols Reorganization Act of 1986 again calls for the transfer of the CAS mission to the Army. Neither Army nor Air Force leadership support such a change, as evidenced by a 1988 letter from the Army/Air Force chiefs of staff to the chairman of the House Armed Services Committee and Senate Armed Services Committee that reconfirmed that CAS is an Air Force mission and that both the Army and Air Force are satisfied with this.[20]

Clearly, the Army and Air Force have moved past debating the *who* and *how* of conducting CAS to jointly conferring on the larger issue of *what* support for ground forces entails in the modern airland battlefield. Yet, civilian leadership continues to focus on the narrow issue of CAS. The answer to these issues lies in emotional baggage of the political fighting for equipment that accompanied the evolution of the Key West Agreement and the post-World War II combat experiences of the US military. Let us first examine the emotional issue of equipment acquisition that accompanied the Key West Agreement.

## Of Mud-Fighters and Fighters that Move Mud

The Key West Agreement, along with tasking the Air Force to provide CAS to the Army, tasked the Air Force with procuring the aircraft to perform the CAS mission. Postwar budget realities soon led to Army discontent with Air Force procurement. The Army charged that the Air Force was concentrating its efforts on strategic bombing and that the tactical aircraft which were purchased were all built primarily for aerial dogfighting, because "no slow, armored aircraft capable of a large munitions payload—those optimal for close air support over the battlefield [in the Army's opinion]—were developed by the Air Force after the war [World War II]."[21]

From the Army perspective, the problem with Air Force procurement was twofold. The Army wanted the Air Force to provide specifically designed CAS aircraft. On a deeper level, however, the Army wanted a CAS asset under Army, not Air Force, control. After the Korean War, it pushed to change the Key West Agreement to allow the Army to design its own CAS aircraft.

From the Air Force perspective, the retention of the CAS mission was essential because along with the mission came a larger share of the budget. Critics argued that by maintaining the CAS mission, the Air Force could justify a higher number of aircraft, and it could perform the mission using supersonic aircraft optimized for higher-priority Air Force missions such as destroying enemy aircraft and bombing facilities in the enemy's rear.[22] Due to strong congressional support for the Air Force in the early cold war years, the Army was not able to gain control of the CAS mission.

As already mentioned, the Army attempted in the late 1950s to circumvent the Key West Agreement and purchase the Italian G-91, a small fighter with no advanced capabilities, for deployment to NATO. Congress killed this proposal through DOD Directive 5160.22, 18 March 1957, and further prohibited the Army from purchasing fixed-wing, close-air-support aircraft. Happily, technology presented the Army another course of action.

In 1962 Secretary of Defense Robert S. McNamara ordered the Army to assess the role of Army aviation in future combat. Gen Hamilton Howze of the Army headed the study commission that endorsed a major role for Army aviation in providing mobility and air support on future battlefields. This revolutionary study recommended that these missions would best be accomplished by rotary-wing helicopters. The growing conflict in Vietnam forced the Army to acquire large numbers of helicopters, but when the Army began to arm these helicopters, the Air Force protested. Richard A. Stubbing and Richard A. Mendel note that the Army had no armed attack helicopters prior to the mid-1960s, but "by the end of the decade it had thousands of armed UH-1s fighting in Vietnam. Finally, the Army had a close-air-support force under its own control."[23] The helicopter did have recognized limitations, but technology had provided the Army a way around the congressional ban on fixed-wing close air support under Army control.

To capitalize on their exclusive rights to rotary-wing aircraft, the Army embarked on an ambitious project in the late 1960s. That project was the Cheyenne—an attempt to design both a helicopter and a fixed-wing aircraft in one airframe. Stubbing and Mendel state that "this unusual design feature was derived from the Army desire to transcend the restriction on fixed-wing aircraft; the hybrid approach could be sold within the Army's role in close support."[24]

The Cheyenne pushed technology beyond its capability, and when several of the prototypes crashed, the project was canceled in 1969. Despite the failure of the Cheyenne, the Army had succeeded in building a large, permanent attack helicopter force to perform close air support under Army control.[25] The Cheyenne program, however, again brought the Army/Air Force CAS issue to the attention of Congress.

To force the Air Force to respond to its CAS responsibility, Secretary of Defense McNamara ordered the service to purchase three wings of the Navy's subsonic A-7 attack aircraft. This guidance compelled the Air Force to formulate a new strategy in dealing with the CAS issue. The Army was now in possession of thousands of armed helicopters, and political pressure for the Air Force to do more CAS was mounting. It was apparent that the Air Force must address the CAS issue or lose the mission and its associated funding. The Air Force responded with a prototype competition that was initiated in 1970 for a new subsonic attack plane optimized for close air support. The A-10 "was endowed with a long range and loitering time in flight, heavy armor to withstand fire from the ground, and a large weapons payload."[26]

After 25 years, the Air Force was procuring the aircraft that the Army had first requested in the late 1940s. The A-10 was designed to meet the less sophisticated threat array present in South Vietnam instead of the high-intensity combat environment of central Europe. It entered the inventory in 1973, too late for the Vietnam conflict but still greatly loved by the Army. The Air Force and its pilots had serious doubts that the aircraft could survive on the modern battlefield. Though the Army loved it, the A-10 did not fill all of the Army's needs.

The advanced attack helicopter program of the mid-1970s was an attempt by the Army to address the highly lethal modern battlefield. This program produced the Apache attack helicopter, which is entering service at this time. At more than $10 million a copy, the Apache is truly not a low-cost alternative to fixed-wing aircraft. It is this parallel development of fixed- and rotary-wing aircraft to conduct the CAS mission that has drawn criticism. Authors such as Stubbing and Mendel have accused both the Army and Air Force of pursuing a policy of paradox:

> The Air Force continues to give minimal attention to close air support and buys just enough attack aircraft to protect its claim to the close air support mission. Meanwhile, the Army, unsure that it can rely on Air Force support when it is needed, purchases a vast fleet of attack helicopters which, while more expensive than attack planes and potentially far more vulnerable, can be placed under direct Army command.[27]

The debate has not ended. In 1988 the Senate charged that

> the Air Force has no intention of performing a serious modernization of close air support aircraft [and] ordered a Pentagon study of whether the mission should be transferred from the Air Force to the Army. . . . At the same time, it directed the Secretary of Defense to undertake an independent evaluation of close air support needs, both short term and long.[28]

The CAS controversy again is centered on the issue of the type of aircraft and the doctrine guiding its employment.

Senator Dixon stated, "The Army believes privately that the Air Force would divert A-16s [a CAS version of the F-16] to other missions—i.e., battlefield interdiction rather than close air support—in the event of war."[29] He further reiterated some historical arguments that the Air Force has never given very high priority to close air support and that "you do not become an ace in the Air Force by killing tanks."[30] His contention is based on Air Force plans to spend $12 billion over the next seven years to develop a new fighter but almost nothing to modernize its CAS aircraft.

The political sensitivity of this issue has forced Air Force leaders to respond to these attacks. Gen Robert D. Russ, USAF, commander of Tactical Air Command, said in an interview with *Aviation Week & Space Technology* that the A-16 would be dedicated to the air-ground mission and would not be diverted to air-to-air or to nuclear missions. The A-16 will be devoted entirely to the Army. As General Russ stated, "They're going to be painted green and they're going to be out there operating with the Army day in and day out."[31]

The question remains, Why has the political emphasis remained focused solely on the close aspect of support for the Army? Under FM 100-20, CAS was the third priority mission. Under the Key West Agreement, CAS was a collateral task to be accomplished by the Air Force to aid the Army in accomplishing its mission. Today, nine of the 35 wings of the tactical air forces are CAS-specific A-10 and A-7 aircraft. Clearly, the Air Force force structure devotes many of its aircraft to the CAS mission. Why does Congress still not believe the Air Force is serious about the CAS mission? The answer to this question lies in the terrible experiences of the Vietnam War.

## The Vietnam CAS Experience

As noted in chapter 1 of this study, aircraft are most often thought of as being flying artillery when supporting ground forces. The emphasis is on firepower and the aircraft's ability to deliver that firepower at the time and place of the ground commander's choosing. This view of air power was galvanized by the combat experiences in Vietnam. Donald J. Mrozek, in his book *Air Power and the Ground War in Vietnam*, discusses this relationship:

> In his commentary on the Vietnam conflict, Gen William Momyer suggested that General Westmoreland saw air power primarily as a source of firepower to augment ground artillery, essentially in support of localized ground combat. And while increased firepower and enhanced mobility did affect calculations as to what operations might be conducted safely, the employment of air power did not seem to alter fundamentally Westmoreland's thinking about how to wage war. He still thought "the main task was that of the soldier 'finding and fixing' the enemy." Air power was "a supporting element rather than a dictating consideration."[32]

It was the nature of this localized ground combat that placed particular emphasis on the firepower aspects of aircraft and a premium on the time required to provide support:

> According to some estimates, Air Force tactical aviation was called in to support only 10 percent of ground battles in South Vietnam. Half of all ground contacts with the enemy were too short—less than twenty minutes—to call in strikes from the Air Force. Also, from the Army's point of view, helicopter gunships gave them the advantage of ready firepower. Many Air Force analysts thought airplanes should have been used more extensively, but Army ground commanders were prone to view these Air Force assets as most beneficial in an extended contact involving large numbers. Behind this difference lay a difference in vision of the war and how best to fight it.[33]

This difference in perspective is essential to the understanding of the Army/Air Force relationship in Vietnam. The Air Force was involved in the support of a strategically defensive effort, the strategic objective of which was to defend and strengthen pro-US forces centered in Saigon against a combined Vietcong and North Vietnamese effort. "The means for achieving this strategically defensive objective even included employing, for tactical defensive purposes, weapons with a primarily offensive image and generally strategic character."[34]

The conflict in Vietnam eroded doctrinally into two air wars conducted simultaneously. In South Vietnam, a war of close cooperation with ground forces was conducted. Unfortunately, due to the elusive nature of the enemy, this war met with minimal success. In North Vietnam, a more classical air campaign was conducted:

> American air power doctrine was based on the concept of strategic bombardment, a concept based on two fundamental assumptions. The first assumption was that any American war would be waged to destroy the enemy's ability to wage modern warfare. The second assumed that any enemy the United States might engage would be a modern industrialized state. In Vietnam, neither assumption held true. The American objective, when engaging the North Vietnamese, was to persuade the North Vietnamese to desist in their support of the war in South Vietnam. Further, North Vietnam was anything but a modern industrialized state.[35]

This two-front air war was doctrinally bankrupt. There was never an attempt to conduct an air campaign as defined by FM 100-20. Air superiority was never obtained over North Vietnam. True, the North Vietnamese air force never attacked South Vietnam, but the North Vietnamese were never denied the ability to inflict heavy losses on the US air forces attacking North Vietnam at any time and place of their choosing. Because air superiority was never obtained, the battlefield was never isolated. True, the

North Vietnamese were seldom able to mass for major offensives, but their freedom of movement in small units was impossible to deter. Finally, because of failure to accomplish air superiority or isolation of the battlefield, close cooperation of air and ground forces was extremely difficult because the enemy forces in South Vietnam only fought at times and places of their own choosing.

Frustration with this situation forced US leaders to develop "an intense reliance on firepower and technology."[36] Unfortunately, these were the wrong weapons to use against the North Vietnamese. Gen Frederick C. Weyand, former chief of staff of the Army and the last head of the US Military Assistance Command, Vietnam, styled the US way of war as "particularly violent, deadly and dreadful. We believe in using 'things'—artillery, bombs, massive firepower—in order to conserve our soldiers' lives." General Weyand also noted that the enemies faced by the United States in Vietnam did the opposite, compensating for a "lack of 'things' by expending men instead of machines."[37]

With the focus on firepower and fast reaction, the command and control system in South Vietnam became essential. The direct air support centers collocated at the Army corps headquarters became the focal point of all support for ground forces. All air support for the corps was controlled as though it was CAS. However, this directly contradicted *what* CAS involved.

TACM 2-1 defines close air support as "air action requested by the ground commander against hostile ground targets requiring DETAILED INTEGRATION of each mission with the fire and movement of the supported ground forces [emphasis added]."[38] All support for ground forces in Vietnam came under the heading of CAS. For this reason, much of the emotional baggage of CAS carried today has nothing to do with *what the* CAS mission involves. Unfortunately, one of the legacies carried from Vietnam is the way the battlefield is doctrinally divided.

## The Linear Nature of the Doctrinal Battlefield

Because Vietnam was fought on the tactical level of war and entailed firepower and defensive actions, the focus of Army/Air Force coordination was meant to ensure that fratricide did not occur. The thrust was to deconflict fires, not to integrate those fires. This legacy remains today.

To illustrate this accusation, let us examine a portion of Gen William W. Momyer's *Air Power in Three Wars* as he describes the defense of the Marine firebase at Khe Sanh:

> For our air strikes to be effective, we would have to make them as close to our trenches as possible. Since there were no troops outside of the base or the hill outposts, air strikes could be brought in very close to the defended positions without endangering our own forces. We planned to deliver most ordnance close to the base perimeter and make selected strikes against the primary approaches to the base. . . . The problem of air controlling became acute. The Marines had maintained that this was a Marine air-ground team operation and that all air used for close air support should come

under their control. Furthermore, *a circle had been drawn around Khe Sanh, and it was proposed to prohibit all but Marine air strikes within that circle* [emphasis added].[39]

This linear/zone relationship continues in doctrine today.

The modern battlefield can be said to begin where the enemy's forces and friendly forces meet. That would seem logical, but it is not exactly true. Doctrinally, the modern battlefield begins somewhere between the forward line of own troops (FLOT) and the forward edge of the battle area (FEBA). JCS Pub 1, *Department of Defense Dictionary of Military and Associated Terms*, defines these terms as follows:

**Forward line of own troops**—A line that indicates the most forward positions of friendly forces in any kind of military operation *at a specific time* [emphasis added].

**Forward edge of the battle area**—The foremost limits of a series of areas in which ground combat units are deployed, excluding areas in which the covering or screening forces are operating, designated to coordinate fire support, the positioning of forces, or the maneuver of units.[40]

Each ground unit establishes both a FLOT and a FEBA. The FEBA encompasses the main battle forces of the unit excluding any covering or screening forces. The FLOT, on the other hand, includes *all* of the unit's forces. The two are not collocated, and one of the confusing issues is that the FLOT usually extends many kilometers from the FEBA. This is due to the nature of the screen force mission in modern warfare. Why are the FLOT and FEBA necessary?

In a 10 August 1981 memorandum, Brig Gen McDonald A. Morelli of TRADOC described the rationale behind the Army's emphasis on the FLOT rather than the FEBA:

The primary reason the US Army adopted FLOT in its AirLand Battle operational concepts stemmed from the change in the operational concept and mission of the Corps Covering Force, approved by General [Donn] Starry several years ago. Essentially, when General Starry decided that the Covering Force would be the first echelon of defense and fight a major battle to force the enemy to deploy his main body, there was no way to depict a FEBA for this "battle area" and remain in consonance with approved NATO terms (NATO definition of FEBA excludes the covering force operations). General Starry decided to use FLOT since the Covering Force Battle was to be the baseline where he wanted the time lines established and the AirLand Battle to begin.[41]

The concept of the FLOT has a basic significance: it establishes the start point of the modern battlefield in *time as well as space*. In the words of Lt Gen Merrill A. McPeak, "In brief, today's baseline battlefield control measure is the FLOT."[42] Unfortunately, there are many other control lines in the framework of the modern doctrinal battlefield, but all other lines are based on the FLOT. The next line is the fire support coordination line (FSCL). JCS Pub 1 defines the FSCL as follows:

*fire support coordination line*—A line established by the appropriate ground commander to insure coordination of fire not under his control but which may affect current tactical operations. The fire support coordination line is used to coordinate

> fires of air, ground or sea weapons systems using any type of ammunition against surface targets. The fire support coordination line should follow well defined terrain features. The establishment of the fire support coordination line must be coordinated with the appropriate tactical air commander and other supporting elements. Supporting elements may attack targets forward of the fire support coordination line, without prior coordination with the ground force commander, provided the attack will not produce adverse surface effects on, or to the rear of, the line. Attacks against surface targets behind this line must be coordinated with the appropriate ground force commander.[43]

The purpose of the FSCL is deconfliction rather than integration. Regrettably, as Army Capt Peter M. Ossorio has pointed out, "Given the problems of communications, coordination, and response time, rigid separation of Army and Air Force fires was the only way to attack targets while protecting our own troops."[44] But can the lethality and mobility of the modern battlefield afford the luxury of this total deconfliction? As General McPeak indicates, "We should not minimize the difficulties even today, but our focus now is how to attack the target jointly, rather than a battlefield that is hived off into exclusive domains."[45]

To illustrate the difficulties that exist today in jointly providing fire support to the ground commander, let us examine how the Army's AirLand Battle doctrine has further complicated the issue. Col Robert D. Rasmussen made the following comments in a 1978 article in the *Air University Review*:

> The dividing line between close air support and interdiction has always been the fire support coordination line (FSCL). . . . Separating close air support and interdiction operations on the battlefield is relatively simple.[46]

Let us contrast Colonel Rasmussen's words to the November 1984 Joint Service Agreement on the Joint Attack of the Second Echelon (J-SAK):

> • The air component [commander] provides close combat support (close air support). He provides general support (counterair and air interdiction) by maintenance of air superiority and interdiction.
>
> • Battlefield air interdiction (BAI) is a subapportionment of air interdiction (AI) and *not* a separate effort. . . .
>
> • BAI is not part of AI. It is apportioned as part of offensive air support and is a direct support asset.
>
> • The air component commander does not manage the entire theater interdiction campaign; rather, he is responsible for the interdiction planning for those targets/missions beyond the corps/army group reconnaissance and interdiction planning line (RIPL).[47]

Nor do doctrinal definitions of the battlefield of the future appear to offer hope for a simpler system of defining that battlefield. The successor to AirLand Battle is the Army's AirLand Battle-Future, which attempts to define the battlefield of the next century. The draft to "AirLand Battle-Future (Heavy) 2004," states that

> to provide an analytical structure (not intended to be doctrine) that coincides with the anticipated changes in the threat and battlefield environment, the close operations

area is divided into three sections: the *combat FLOT* area, the *combat rear* area, and the *combat forward* area.[48]

Clearly, the reason for the linear nature of the battlefield is deconfliction and avoidance of fratricide. This is not an irrelevant requirement; however, are there proactive reasons for these lines? The linear nature of the battlefield is intended to facilitate coordination and synchronization. Clearly, attacks conducted between the FLOT and the FSCL require coordination. What is this coordination process? To understand the methodology, let us refer to JCS Pub 2, *Unified Action Armed Forces*:

> The commander of the supported force [will] indicate in detail to the supporting commander the support missions he wishes to have fulfilled and provide such information as is necessary for complete coordination of the supporting action of his own force.[49]

General McPeak believes that "we are required to 'coordinate' attacks inside the FSCL. The particulars of coordination are not well defined. And in the case of attacks requested by the ground commander, the request itself may be viewed as incorporating the required coordination."[50] While the act of requesting may fulfill the "legal" requirement of coordination, the ground commander is not simply trying to achieve coordination; he wants synchronization.

Synchronization is one of the four basic tenets on which AirLand Battle doctrine is based. FM 100-5, *Operations*, defines synchronization as "the arrangement of battlefield activities in *time, space, and purpose* [emphasis added] to produce maximum relative combat power at the decisive point."[51] Synchronization is both a process and a result. If commanders synchronize their activities, their operations will be, by definition, synchronized. Synchronization is *not* coordination in the context of AirLand Battle. To understand this difference, study the following portions of FM 100-5 carefully:

> Synchronization may and usually will require explicit coordination among the various units and activities participating in any operation. By itself, however, such coordination is no guarantee of synchronization, unless the commander first visualizes the consequences to be produced and how activities must be sequenced to produce them. . . . Synchronization need not depend on explicit coordination if all forces involved fully understand the intent of the commander, and if they have developed and rehearsed well-conceived standard responses to anticipated contingencies.[52]

In actual practice, this attempt to reconcile a commander's need for synchronization with the doctrinal requirement of coordination has compelled ground commanders to draw other control lines on the modern battlefield. The location of these lines are based on two concepts: the area of influence and the area of interest. Commanders' areas of influence are the geographical areas that they are directly capable of influencing by maneuver or firepower. A commander's area of interest is the area occupied by the enemy that can affect the mission beyond the commander's means to influence. As technology increases the range of weapons and the

capability of sensors, the larger these areas of influence and interest become.

The question becomes, How far forward does the commander need to influence to achieve victory? First, however, it is important to remember that this discussion focuses on operational art and that the ground commander under discussion is the corps commander, the lowest commander to operate at the operational level.

Until AirLand Battle doctrine, the FSCL was the most important coordination line on the battlefield, and it was normally located 25 kilometers forward of the FLOT. AirLand Battle has pushed the corps commander's area of interest far beyond this 25-kilometer FSCL because the operational depth to which the attack is pressed by the corps is a key component of success for that doctrine:

> At the outset, AirLand Battle recognizes that deep attack—or the deep battle, as it is termed—is a prerequisite to successful execution of the doctrine. Because the doctrine focuses on corps operations, it envisions the conduct of the deep battle out to 100–150 kilometers—the limit of the corps commander's area of influence. . . . AirLand Battle doctrine attempts to deny success to an aggressor's attack by seizing and maintaining the initiative. . . . Two battles must be fought simultaneously and in close coordination: a forward battle against committed units; and a deep battle against uncommitted forces.[53]

Take note that FM 100-5 recognizes a third battle—the rear battle—that must be fought simultaneously with the close and deep battles. The rear battle is important to the success of both the close and deep battle because "the primary reason for waging the rear battle is to retain overall freedom of action."[54] However, winning the rear battle will not ensure victory. FM 90-14, "Rear Battle," states that "the Army can be decisively defeated by the enemy in the rear area even if it is winning elsewhere."[55]

The modern battlefield will not be linear. The requirement to simultaneously win rear, close, and deep battles causes the concepts of the FEBA, FLOT, and FSCL to become blurred. Maj Michael L. Wolfert has identified some of the problems inherent in this new view of the airland battlefield:

> The non-linear nature of the battlefield causes problems for planners and support personnel. Where are we going to mass our efforts? Since forces move so quickly, how will we be able to identify our forces? Can we assure all our fires are integrated into a cohesive program to destroy the enemy? These questions continually perplex the modern soldier and airman. It is these questions which must be resolved if modern CAS is to be effectively integrated into the ground campaign.[56]

Has the airland battlefield so radically changed our requirements to jointly employ air and ground assets that the time has come to abandon the old ideas on *what* close air support means as operational art?

## A New Definition of CAS

As stated earlier, TACM 2-1 defines close air support as "air action requested by the ground commander against hostile ground targets requir-

ing DETAILED INTEGRATION [emphasis in the original] of each mission with the fire and movement of the supported ground forces."[57] The mobility of aircraft and their ability to concentrate firepower complements the fire support of the ground forces. This is a fine definition of *how* CAS is accomplished, but it leaves in doubt *what* it is to accomplish. True, all air-to-ground missions have a single purpose—bombs on target—but only at the tactical level of war. Doctrine must address the operational level of war. Rather than having "most bombs on target" as its principal purpose, operational art is concerned with what those bombs are going to accomplish.

A second problem with this definition of CAS even at the tactical level is the limited scope of *how* aircraft accomplish CAS. If CAS simply complements Army fire support, we are fielding very expensive artillery tubes disguised as fighter and attack aircraft. To concentrate CAS, numbers of aircraft must be massed. A single aircraft can only mass the firepower of that aircraft. The principle of mass requires numbers of aircraft. If this definition of CAS only addresses the tactical level of war, what would an operational level definition of CAS be? Let us explore one possibility.

John A. Warden III defines CAS as "any air operation that could and would be done by ground forces on their own, if sufficient troops or artillery were available."[58] *What*, then, does CAS do in this definition? Put simply, it does what the ground forces would do if they had the force structure to respond. It is a part of the ground commander's force structure; it is not an asset to complement fire support but a force to be integrated into the ground commander's scheme of maneuver. But this definition too is limited and disregards the primary asset of air power—mobility.

Larger numbers of troops and guns are not as mobile as aircraft. They cannot project the combat power in time and space that air power can. Chapter 1 discussed tactical air forces as an independent maneuver element. CAS as operational art is *any air operation that ground commanders would accomplish with their own forces if those forces had the capability and firepower necessary to maneuver to accomplish the objective within the time available with the mass required.* CAS is not just fire support, nor is it only close, because the fluid nature of the modern battlefield renders "close" meaningless. CAS is an independent maneuver element to be integrated into the plan of maneuver of the corps commander. It must be massed to meet the threat and accomplish the mission. This is air support as operational art.

The next chapter explores some of the joint efforts to deal with the modern, nonlinear battlefield. We will determine if operational art can be conducted in joint operations.

**Notes**

1. Senate Committee on Armed Services, *Defense Organization: The Need for Change*, staff report (Washington, D.C.: Government Printing Office, 1985), 435.

2. Morton H. Halperin and David Halperin, "Rewriting the Key West Accord," in *Reorganizing America's Defense: Leadership in Peace and War*, ed. Robert J. Art, Vincent Davis, and Samuel P. Huntington (Washington, D.C.: Pergamon Brassey's International Defense, 1985), 346.

3. Alice C. Cole, ed., *The Department of Defense: Documents on Establishment and Organization, 1944–78* (Washington, D.C.: Historical Office, Office of the Secretary of Defense, 1978), 276–85.

4. Carl W. Borklund, *The Department of Defense* (New York: Frederick A. Praeger, 1968), 271.

5. Lt Col Wayne Williamson, USAF, "Bullet Background Paper on Proposed CAS Mission Transfer to Army" (paper presented to the Tactical Air Conference, Langley AFB, Va., 14–16 March 1989), 86.

6. Senate, *Defense Organization*, 436.

7. Ibid.

8. Ibid., 437.

9. Halperin and Halperin, 347.

10. Ibid., 346.

11. Williamson, 86.

12. Ibid.

13. Senate, *Defense Organization*, 437.

14. Williamson, 86.

15. Ibid.

16. Ibid., 87.

17. Senate, *Defense Organization*, 438.

18. Ibid.

19. Williamson, 87.

20. Ibid.

21. Richard A. Stubbing and Richard A. Mendel, *The Defense Game: An Insider Explores the Astonishing Realities of America's Defense Establishment* (New York: Harper and Row, 1986), 140.

22. Ibid.

23. Ibid., 141.

24. Ibid.

25. Ibid.

26. Ibid., 142.

27. Ibid.

28. Paul Mann, "Senate Girds for Fight with USAF over Close Air Support Aircraft," *Aviation Week & Space Technology*, 22 August 1988, 21.

29. Quoted in ibid., 21.

30. Ibid.

31. Quoted in ibid., 21.

32. Donald J. Mrozek, *Air Power and the Ground War in Vietnam: Ideas and Actions* (Maxwell AFB, Ala.: Air University Press, January 1988), 74.

33. Ibid., 118.

34. Ibid., 17.

35. Col Dennis M. Drew, USAF, *Rolling Thunder 1965: Anatomy of a Failure* (Maxwell AFB, Ala.: Air University Press, October 1986), v.

36. Mrozek, 4.

37. Quoted in Harry G. Summers, Jr., *On Strategy: The Vietnam War in Context* (Carlisle Barracks, Pa.: Strategic Studies Institute, US Army War College, 1981), 25.

38. TACM 2-1, *Tactical Air Operations*, 15 April 1978, 4–38.

39. Gen William W. Momyer, USAF, Retired, *Air Power in Three Wars* (Washington, D.C.: Government Printing Office, 1978), 308–9.

40. Joint Chiefs of Staff (JCS) Pub 1, *Department of Defense Dictionary of Military and Associated Terms*, January 1986, 151.

41. Memorandum, Brig Gen McDonald A. Morelli to Gen Glen K. Otis, commander of TRADOC, subject: FLOT/FEBA Background Information, 10 August 1981, on file at Headquarters TAC/XPD.

42. Lt Gen Merrill A. McPeak, USAF, "TACAIR Missions and the Fire Support Coordination Line," *Air University Review* 36, no. 6 (September–October 1985): 66.

43. JCS Pub 1, 141.

44. Capt Peter M. Ossorio, USA, "Beyond the No Bomb Line—Fire Support Coordination 1980s," *Military Review* 58, no. 10 (October 1978): 73.

45. McPeak, 66.

46. Col Robert D. Rasmussen, "The Central Europe Battlefield: Doctrinal Implications for Counterair Interdiction," *Air University Review* 29, no. 5 (July–August 1978): 11–13.

47. Lt Col Stephen T. Rippe, USA, "An Army and Air Force Issue: Principles and Procedures for AirLand Warfare," *Air University Review* 37, no. 4 (May–June 1986): 63.

48. US Army TRADOC Operational Concept, "AirLand Battle-Future (Heavy) 2004," final draft, 10 January 1989, 2–30.

49. Joint Chiefs of Staff (JCS) Pub 2, *Unified Action Armed Forces*, 1 December 1986.

50. McPeak, 66–67.

51. FM 100-5, *Operations*, 5 May 1986, 17.

52. Ibid., 17–18.

53. Col John R. Landry, USA, "Deep Attack in Defense of Central Europe: Implications for Strategy and Doctrine," *Essays on Strategy* (Washington, D.C.: National Defense University Press, 1984), 36.

54. FM 90-14, "Rear Battle," final draft, 19 November 1984, i.

55. Ibid.

56. Maj Michael L. Wolfert, "From ACTS to COBRA: Evolution of Close Air Support Doctrine in World War Two," Research Report 88-2800 (Maxwell AFB, Ala.: Air Command and Staff College, 1988), 111–13.

57. TACM 2-1, 4–38.

58. John A. Warden III, *The Air Campaign: Planning for Combat* (Washington, D.C.: National Defense University Press, 1988), 102.

## Chapter 5

# Army/Air Force Joint Doctrine

Before discussing the issues and agreements governing Army/Air Force joint doctrine, we need to make certain distinctions in the meaning of the word *joint*. In this chapter, *joint* is spelled with a little *j* because these agreements address only the Army and the Air Force. In military convention, the capital J is only used with joint issues that have been approved by all four of the services and the Joint Chiefs of Staff. If the reader finds this confusing, remember there exists another dimension to this issue: combined doctrine. Combined doctrine refers to operations conducted in coalition warfare with foreign military forces as allies. It follows that military operations in the future could be joint, Joint, or combined. Military operations can be joint (Army and Air Force), Joint (all four US services), joint and combined (Army, Air Force, and a foreign allied military), or Joint and combined (four US services and a foreign allied military).

First let us discuss the nature of these joint agreements, perhaps it would be helpful to explore the command relationships that existed in World War II.

## Air-Ground Command Relationships: A World War II Perspective

The proving ground for joint Army Air Forces doctrine in World War II was North Africa. It must be remembered that the British began fighting in North Africa in 1940, while the Americans did not enter the scene until Operation Torch in the fall of 1942. To understand the evolution of American joint support doctrine, one must first understand the British system that strongly influenced the Americans.

As discussed earlier, the Royal Air Force had been a separate and equal military service since World War I. For this reason, the RAF command relations were not as emotional and political as those of the Army Air Corps. The RAF and the British army worked as equal partners from the first in North Africa.

The British were also fortunate to have two military leaders who understood the complementary nature of the air and ground campaigns. Air Vice-Marshal Sir Arthur ("Maori") Coningham and Field Marshal Sir Bernard Montgomery devised an airland doctrine based on cooperation of air and ground forces. The key principles of this doctrine were:

1. Air and ground commanders must have their headquarters alongside each other and must work to carefully coordinate common plans of action toward one goal—winning the battle.

2. The overall plan must conform to the air situation even if it involves the postponement or curtailment of the ground plan. This philosophy will result in fewer casualties and economy of force within the theater.

3. Once the joint air-ground plan has been decided and coordinated the air commander must do his best to implement by correctly applying his forces to the key objectives and within the principles of air war.

4. The first aim of the Air Force Commander must be to gain the initiative, and, with it, air supremacy over the battlefield. When he has achieved this goal, he can go ahead with the more direct support for the joint air-ground plan of operations.

5. The whole of the ground forces must thoroughly understand what air support means. They must realize that "out of sight" of the ground forces does not mean that the ground forces or their needs are "out of the minds" of the airman.[1]

Naturally, problems developed when the US Army with its radically different doctrine entered the war in North Africa. Gen William W. Momyer relates one such occurrence in *Air Power in Three Wars:*

For example, when Lieutenant General George S. Patton had bitterly complained because he wasn't getting air support . . . in the El Guettar battle in Tunisia. Eisenhower sent Tedder to Patton's headquarters at Gafsa to iron out the problem. At that point, Coningham and Patton were at an impasse: Patton wanted close air support, but Coningham wanted to sacrifice close air support [CAS] in favor of attacking the German Air Force directly. So Tedder had a ticklish problem made more difficult by the differences in nationality and service. Still, he handled the disagreement with considerable tact and averted a potentially serious international incident between allies.[2]

Chapter 2 discussed the evolution of a common air-support doctrine at the Casablanca Conference. Equally interesting was the manner in which that doctrine was implemented. Much of the success of that doctrine must be attributed to the personalities of the air and ground commanders involved. Let us examine some of those relationships as they developed after the Normandy invasion.

The Americans adopted the joint headquarters concept for the invasion of Europe. The Ninth Air Force implemented the advanced headquarters concept. When an Army unit moved forward, an equivalent air component moved forward and physically collocated. When the First Army moved to the Continent on D-day, IX Tactical Air Force moved to the same location. This physical proximity allowed for extraordinary cooperation in the planning and execution of air support for the ground forces involved.

By collocating air and ground headquarters, General Bradley and Major General Quesada were able to jointly plan air and ground operations. Each evening, air and ground commanders would meet to review the day's operations and to preplan the CAS operations for the next day. . . . During this meeting, a priority arrangement was made for CAS. Maintenance problems, weather, and overall objectives helped to identify the amount of effort available and CAS targets for the next day. . . . The agreed upon list of CAS targets would be sent to tactical units by the G-3 (Air) by 0200 each

morning. These nightly planning conferences assured that air and ground plans were effectively integrated to meet theater level objectives for the campaign.[3]

The procedure described above sounds much like the allocation and apportionment procedures used by the TAF today. The process is perhaps the same, but the focus is much different. First, the commanders could concentrate exclusively on CAS because prior to the invasion, the doctrinal missions of air superiority and isolation of the battlefield had been accomplished. The commanders had the luxury of focusing on CAS, not attempting to accomplish all missions and air tasks simultaneously.

A second luxury of the postinvasion campaign was the face-to-face communication of the leaders involved. General Momyer addresses the closeness of these relationships:

> The most telling argument for eliminating the AEAF [Allied Expeditionary Air Force] was that the U.S. tactical bombers and fighters in the 9th Air Force already worked closely with Bradley's 12th U.S. Army Group; AEAF wasn't needed to coordinate between them. The 9th Air Force commander, General Hoyt S. Vandenberg, could and did coordinate with his British counterpart, Air Marshal Coningham, Commander of 2nd Tactical Air Force; and there was adequate direction from Eisenhower's headquarters on the individual responsibilities of the British and American tactical air force commanders.[4]

Lt Col Stephen T. Rippe, USA, writing in the *Air University Review*, summarized the lessons of World War II for joint doctrine as follows:

- Air and ground organizations were structured to support the fundamental concept of air superiority while maximizing air force capabilities to concentrate combat power rapidly.
- Headquarters were collocated at the operational level (army/tactical air command).
- The interface of air and ground component commanders was at the field army/tactical air command level because *the system was organizationally designed to support AirLand warfare at the operational level.*[5]

The personalities of the commanders involved contributed greatly to the success of this system. Patton's Third Army and Brig Gen Otto P. Weyland's XIX Tactical Air Command became legendary during Operation Cobra (the American breakout from Normandy). During the Battle of the Bulge, Lt Gen Omar Bradley and Maj Gen Elwood R. ("Pete") Quesada were an air-ground team dedicated to the task at hand. These leaders cooperated to achieve victory, putting aside personal differences. This spirit of cooperation was based on 10 rules of air power first enunciated by Air Marshal Lord Arthur Tedder after the El Alamein victory in June 1942:

1. Air power must be independent of land and sea forces.
2. The Army Headquarters and the Air Headquarters must be adjacent to each other.
3. Every night the air and ground commanders must hold a staff meeting to hash over problems and decide tomorrow's program. The close air support and air interdiction campaigns can be integrated into the ground commander's overall concept of operations.
4. Radar is very important to air and ground forces.

5. The fighter plane is the basic weapon of an air force. It should be used for the following missions in this priority:

a. Fighter sweeps to clear the enemy out of the sky.

b. Escort for light and medium bombers.

c. Interception of aircraft.

d. As a fighter bomber to provide CAS for ground forces.

6. Always assure quick communications between the Air Headquarters and the Unit Commander.

7. The entire air force should be commanded from an Advanced Headquarters located close to the front lines.

8. Air Power must have a simplified chain of command.

9. Intelligence is very important to an air or ground campaign.

10. Mobility is the key to successful air operations.[6]

This close cooperation between the ground and air commanders approached the German concept of *Auftragstaktik*. The commander's intent was well understood because of the personal nature of the relationship of these men. Integration of effort was exceptional.

One final lesson from World War II. The CAS doctrine, procedures, and control system evolved and were tested through four years of war. They were tested and refined in North Africa, Sicily, and Italy; yet, the fluid nature of the ground combat in northwest Europe would be different from the combat that they had previously experienced.[7] Even four years of war did not prepare the air-ground team for the problems of CAS in a highly mobile and fluid battle situation. This is all the more significant in that the Allies had air superiority; yet in a highly mobile battle, CAS was extremely difficult.

In summary, the World War II experiences of both the British and American commanders involved proved (1) the need to adhere to the doctrine contained in FM 100-20; (2) that the collocation of ground and air commanders facilitated the integration of air into the ground commander's scheme of maneuver; and (3) that even with proven doctrine, procedures, and battle-tested aircrews, the highly fluid nature of maneuver warfare made close cooperation extremely difficult. Does modern joint doctrine take advantage of these wartime lessons?

## Modern Joint Doctrine

As discussed in chapter 4, the Army and Air Force signed a *Memorandum of Agreement on U.S. Army–U.S. Air Force Joint Development Process, 22 May 1984*. This agreement attempts to institutionalize much of the same type of coordination in peacetime that the wartime commanders strove to coordinate their efforts in World War II. The Army's Training and Doctrine Command and the US Air Force's Tactical Air Command are attempting jointly to provide doctrinal guidance for the conduct of the AirLand Battle.

These procedures and policies are being formalized into a set of joint pamphlets, the guiding principle of which is to procedurally connect air and ground assets to generate maximum combat power. In November 1984 the first of these pamphlets was published; its topic is Joint Attack of the Second Echelon (J-SAK). Colonel Rippe addressed the most significant aspects of J-SAK in his article for the *Air University Review*:

- The land component and air component commander consult and coordinate with each other. They command coequal and interdependent forces.
- The air component provides close combat support (close air support). He provides general support (counterair and air interdiction) by the maintenance of air superiority and interdiction.
- Battlefield air interdiction (BAI) is a subapportionment of air interdiction (AI) and *not* a separate effort.
- The tactical air control center and the battlefield control element conduct consultation and coordination. Joint planning by the staffs of the air and ground component commanders does not occur. (Therefore, there is no joint planning or execution at the operational level.)
- Tactical air support requests may be submitted in the form of mission-oriented requests. . . .
- The land component commander prioritizes BAI targets. The air component commander prioritizes AI targets and makes final interdiction target selection.[8]

J-SAK has many positive aspects. First, it moves the focus away from the close battle that has monopolized our thinking on air support for too long. Second, it recognizes that both the air and ground commander have capabilities to interdict forces beyond the FLOT or FEBA. Employing jointly produces synergistic effects; the sum becomes greater than the parts. The objective of this effort is to mass combat power against the second echelon to divert, disrupt, and destroy the enemy's capability to wage war. This sounds very similar to the isolation of the battlefield as defined in FM 100-20. Unfortunately, J-SAK falls short of the clear doctrine contained in FM 100-20.

The first weakness in J-SAK is its focus on *targets.* Operational art is not simply matching airplanes to targets. There must be a new way of thinking at this level, such as thinking of aircraft as the independent maneuver element described in chapter 1. The TACC and the BCE, using this common type of reference, can decide which missions the available air power can perform in the joint force commander's (JFC) scheme of maneuver. The TACC could then look at the threat and could force-package the air assets to accomplish that mission. This would be a catalyst to achieving mass, not allocating, apportioning, and distributing "penny packets." This would also allow the JFC to achieve synchronization and integration rather than coordination. Only in this manner can combat power be applied at the correct time and place within the joint force commander's intent.

This concept of mission-oriented orders holds great potential for good or evil; for mass and flexibility or dispersion and penny packets. Let us

examine this statement in the context of the presentation that Col Samuel Wilder, USA, delivered to the Tactical Air Conference on 16 March 1989. According to Colonel Wilder the following considerations should apply to AirLand Battle planning at the corps level and echelons above the corps:

- Planning for the land campaign should be for five days into the future.
- Planning for ground maneuver should be "top down."
- Tactical air apportionment/allocation should be (1) from the top down, (2) synchronized with ground maneuver, and (3) planned for several days.
- Distribution of air support assets to individual ground units should be based upon the priority of the ground units' effort in the overall plan of operations.[9]

This sounds good, but the problem arises with *how* Colonel Wilder feels this system should be implemented. Again, from the text of his briefing, Colonel Wilder asks if we could have mission orders such as the following:

> The 535th TFW will be in support of V US corps effective 20/2400z. On order, will provide one tactical fighter squadron to support VII US corps.
>
> Or the 535th TFW provides one TFS in support of 5th Mech from H-1 until passage of the 2d Armored Division; thereafter it supports 2d AD.[10]

This could be done, but such a change would return tactical air support to the pre-North Africa days of the air umbrella concept. To understand mission-oriented orders, let us review one that worked. The plan for the invasion of Europe, Operation Overlord, contained excellent mission-oriented orders for the air component:

> 24. Selected points or areas in the enemy beach defense system in the Caen area will be subjected to intense air bombardment for a period immediately prior to the landing of the assault forces.
>
> 25. The maximum air cover will be provided throughout the hours of daylight to protect the area of the landing and the shipping between that area and the ports in the United Kingdom.
>
> 26. Enemy land reinforcements will be delayed and harassed by air action.
>
> 27. The assault will be supported by air attacks against appropriate targets as required and practiced.
>
> 28. Air action will be continued and intensified as necessary against the enemy fighter defense organization.
>
> 29. To protect shipping and craft by night from E-boat attack, ASV [antisurface vessel] aircraft will operate in defense of the cross-Channel route.[11]

This was the entire air annex for the invasion. It conveyed the missions required of the air forces to accomplish the invasion. It did not apportion or allocate assets; it allowed the air commanders to resolve these missions within the force structure available and the doctrinal guidance of FM 100-20. That is operational art and is the type of mission-oriented orders required today, orders that allow commanders to match resources to strategic objectives. But what of the requirement for priorities of effort?

NATO has refused to accept J-SAK because J-SAK assumes that all tactical air missions can be accomplished simultaneously. NATO's prin-

ciple of employment is based on establishing air superiority first due to the reality of limited resources available for simultaneous operations. NATO's operational doctrine, contained in ATP-27(B), *Offensive Air Support*, reflects the historical priority contained in FM 100-20. NATO plans to "gain and maintain air superiority, first, to prevent the movement of enemy forces into and within the theater . . . second, [NATO plans] to assist in ground force objectives through joint operations."[12] Colonel Rippe accuses NATO of rejecting J-SAK because NATO is characterized by a highly complex, coalition warfare environment in which the doctrinal beliefs of several nations must be combined into a single theater campaign plan. "As such, different principles and procedures have been developed to solve the problems associated with air and ground relationships in maneuver warfare."[13]

In reality, NATO's doctrine is very pragmatic. A statement of Air Vice-Marshal J. R. Walker from a lecture delivered on 26 February 1986 at the Royal United Services Institute cuts to the heart of what NATO doctrine is designed to accomplish—response to the Soviet threat.

> Close air support (CAS) is a subject which raises the emotions of both protagonists and opponents. It is, of course, quite understandable. It is the only role in which the Army sees the Royal Air Force participating in what is, for them, the battle. Yet, as technology has favored the anti-aircraft defense over the close support aircraft during the past years, so it is necessary to use CAS sparingly if flexible assets were not to be squandered. . . . The Soviets take the air defense of their forward units very seriously and the airman is presented with a problem: to fly survivable profiles while at the same time achieving reliable target acquisition tends to be mutually incompatible.[14]

The strongest aspect of this new joint doctrine is the recognition by both the Army and Air Force that only cooperation can make this highly lethal environment survivable for both the soldier and the airman. Let us explore two of these joint concepts: joint suppression of enemy air defenses (J-SEAD) and joint air attack team (JAAT) tactics.

The idea that ground forces could aid air forces in penetrating enemy air defenses is not new. As Maj J. B. A. Bailey describes in *Field Artillery and Firepower*, the artillery played a major role in this effort:

> As the role of air power increased, so did the resistance of German air defenses, and it was recognized that the success of an air mission might depend upon an initial thrust by ground forces, bringing enemy air defenses within range of field artillery. . . . The largest SEAD operation in history was undertaken by the British Army between 0930–0952 hours, on 24 March 1945, when all the guns of British XII corps fired 24,000 rounds on to approximately 100 air defense targets.[15]

This role is more important on the modern battlefield due to two force structure realities: the complementary nature of aircraft and artillery, and the nature of the modern antiaircraft defense systems. Major Bailey addresses the cooperative and complementary nature of joint forces in the following fashion:

> Just as close range artillery has been complemented by the increased power of infantry and armour weapons, so artillery is increasingly critical in deeper areas of the battlefield, previously the preserve of airpower. Similarly, aircraft may now be able to

concentrate on targets in deeper and less hostile airspace, which others cannot reach.[16]

The need for this force structure is driven by the threat. Again, Major Bailey addresses the nature of this environment:

> Ground forces need fixed- and rotary-winged aircraft to provide close support and the deep interdiction of second echelon forces, but since 1945 ground air defense systems have increased their range, lethality, and accuracy. A system in 1945 might have a range of 10 km, whereas in the 1980's a WP [Warsaw Pact] division can cover 40 km forward and behind the Forward Edge of the Battle Area (FEBA)—an increase of 36 times the volume of controlled airspace.[17]

Much as the cavalry of old was prevented from accomplishing the charge, modern air defense systems are making the frontal assault difficult for aircraft.

Clearly, joint operations are essential to complicate the enemy's defense system to the maximum extent possible. The joint air attack team concept attempts to complicate the close battle, just as J-SAK and J-SEAD complicate the deep battle. JAAT incorporates fixed- and rotary-wing assets to support the close battle. The synergistic effects of this team concept have been documented in testing:

> During the JAWS/JAAT trials (Joint Attack Weapons Systems/Joint Air Attack Team) undertaken jointly by the USAF and US Army in 1978/79, A-10 Thunderbolt II tank-busters, AH-1S Cobra assault helicopters and OH-58 Kiowa observation and reconnaissance helicopters were used in combination against an attacking armored unit organized in accordance with Soviet Bloc weapons and tactical doctrines. The combined A-10/AH-1S formations achieved up to three times the numbers of hits for an approx. 60% reduction of their own losses compared with missions conducted each on their own.[18]

It is clear that the synergistic effects of joint operations promise greater combat success at a lesser cost in flexible air assets. Yet, many air and ground commanders do not feel that these assets can be synchronized in modern warfare. Is this lack of confidence caused by the lack of a cohesive doctrine to draw these assets together? What should such a doctrine encompass? Colonel Rippe identifies five criteria:

- The campaign plan *drives* all air and ground activities.
- Air superiority is fundamental and must be obtained in consonance with the goals of the campaign plan.
- Air and ground staffs should be collocated and should plan jointly at the operational level.
- Air Force acceptance of missions as *part of the overall campaign plan* (versus target-by-target requests) is key to our joint ability to execute AirLand warfare doctrine.
- Operational commanders must have the ability to synchronize air and ground combat power effectively, in consonance with an operational campaign plan.[19]

This doctrine can be supplied by a combination of FM 100-20 and the present joint procedures contained in the TRADOC and TAC joint pamphlets. Under such a doctrine the first priority would be air superiority. A joint air superiority (JAS) pamphlet would be required to coordinate Army

and Air Force resources to accomplish this mission as soon as possible. Next priority would be the isolation of the battlefield. J-SAK would fall perfectly into this phase of the campaign plan. Finally, the air and ground forces could combine JAAT and J-SEAD in the close battle. The benefits of such a system have been demonstrated in combat. During Operation *Shalom Hagalil* (Freedom for Galilee), conducted 6 June 1982, the Israeli forces were able to deploy using a doctrine similar to that proposed above:

> Thanks to complete air superiority they secured over Lebanon, the Israeli Air Force could be deployed virtually exclusively in support of their own ground troops. Thus they delayed the advance of the Syrian First Armoured Division in the Bekaa valley to such an extent that their own counter-attacking ground forces were able to reach the best jumping off points. . . . The Syrian Third Armoured Division sent in from the North to relieve and/or reinforce the First Armoured Div. was able to be identified, harried uninterruptedly during its advance [isolation of the battlefield] and finally, in a combined action with ground units, set upon the Syrians [close cooperation]. Of the approx. 300 Syrian tanks lost (another 200 fell intact in Israeli hands) about 30% were destroyed by the Air Force and AT [antitank] helicopters.[20]

This is unquestionably the joint air/ground success required by NATO forces in central Europe. But to accomplish this cooperation the tactical air forces must maintain an essential capability—flexibility.

## The Requirements for a Flexible TAF

As this study has related, the lessons of war are clear that tactical air doctrine cannot call for simultaneous accomplishment of all TAF missions. The forces of the TAF, however, must be able to accomplish as many of the TAF's missions as is technologically possible. Priority one of any campaign must be air superiority. Next, the battlefield must be isolated. Finally, close cooperation between air and ground forces must be accomplished. The mass and concentration of effort necessary to quickly move across this spectrum requires highly flexible fighter aircraft. Highly specialized aircraft are counterproductive to these ends.

If our doctrine and force structure calls for close support on day one of the war, only two consequences are possible. Either the air forces will attempt to do CAS with heavy losses, as in the Yom Kippur experience, or they will not conduct the CAS in the face of the threat, leading to the same criticisms that occurred after Kasserine Pass. Neither of these options will lead to success and victory. AirLand Battle doctrine demands a return to the priorities of FM 100-20.

The basis of AirLand Battle is the ability of the ground commander to shift forces and maintain security in the rear areas. One need only remember the experiences of the German units attempting to reach the invasion beaches after D-day to understand the probability of success if air superiority is lost. Isolation of the battlefield is also essential to AirLand Battle. One can argue if it is AI, BAI, or follow-on forces attack (FOFA); but one cannot argue the objective—battlefield isolation.

Finally, close cooperation with ground forces, though it be the third priority, is not the *last* priority. As Gen Frederick C. Weyand quoted earlier in this study, "We believe in using 'things'—artillery, bombs, and massive firepower—in order to conserve our soldiers' lives."[21] Unfortunately, airplanes are things flown by soldiers, and they will be destroyed in the manner in which they are used in battle. Air power must be used to mold the environment in which it is used, not used in any environment no matter the cost.

Attacking any target on the modern battlefield presents common problems. As pointed out in an article in *Aerospace America* in August 1986, all attacks by aircraft are complicated to differing degrees by "weather, contrast, concealment, camouflage, countermeasures, classification, confusion, constricted viewing angle, confined target options per attack, cursor errors, combat conditions, ground clobber, complicated avionics, and cost."[22] The close-in attack associated with CAS incorporates all these problems but also carries two additional problems: complicated procedures and close-in delivery with the associated chance of fratricide.[23] These two problems may be insurmountable in the high-intensity conflict envisioned on day one of a conflict in central Europe. On day five, after air superiority is achieved and the battlefield isolated, it may be relatively simple to overcome those two problems. There are certain realities to be considered in addressing these problems.

Any funds spent to improve the ground-attack capabilities of fighters also improves their ability to conduct close cooperation. AirLand Battle demands aircraft capable of conducting operations in the rear, close, and deep battle. In times of tight military budgets, these capabilities are more essential. Single-mission specialized aircraft will not meet the doctrinal needs of either the Army or Air Force. As Gen Robert D. Russ, commander of TAC, has stated:

> Close air support aircraft must be survivable if they are to contribute to the AirLand Battle. Today's Army theater commander plans to use CAS aircraft against a broad spectrum of targets, both along and behind enemy lines. . . . Air Force experience and studies show that survivability in that environment boils down to five factors: speed, maneuverability, electronic countermeasures, force packaging, and hit tolerance. . . . The AirLand Battle doctrine depends on a survivable attack force.[24]

Hopefully, this study has helped the reader to understand why the men and women of the tactical air forces feel that General Russ's statement means one thing: flexibility. The TAF has one mission—supporting the ground forces—and we are proud of it. If it is not always crystal clear *what* the TAF feels that mission entails, ponder the wisdom of these words of Field Marshal Montgomery, a ground commander of some notoriety:

> The soldier commands the land forces, the airman commands the air forces; both commanders work together and operate their respective forces in accordance with a combined army-air campaign plan, the whole operation being directed by the Army commander. . . . An Army has one battle to fight, the land battle. The Air Force has two. It has first of all to beat the enemy air, so that it may go into the land battle against the enemy land forces *with the maximum possible hitting power* [emphasis

added]. . . . In plain language, no soldier is competent to operate the air, just as no airman is competent to operate the Army.[25]

## Notes

1. Quoted in Lt Col James L. Cash, *The Employment of Air Power in the North Africa Campaign* (n.p., 6 October 1951), 49.
2. Gen William W. Momyer, USAF, Retired, *Air Power in Three Wars* (Washington, D.C.: Government Printing Office, 1978), 49–50.
3. Major Michael L. Wolfert, "From ACTS to COBRA: Evolution of Close Air Support Doctrine in World War Two," Research Report 88-2800 (Maxwell AFB, Ala.: Air Command and Staff College, 1988), 67.
4. Momyer, 51.
5. Lt Col Stephen T. Rippe, USA, "An Army and Air Force Issue: Principles and Procedures for AirLand Warfare," *Air University Review* 37, no. 4 (May–June 1986): 62.
6. "Notes on Air Operations against Rommel in Egypt and Libya," *Command Information Intelligence Series*, no. 43-7 (Washington, D.C.: Office of the Assistant Chief of Staff for Intelligence, 6 May 1943), 1–6.
7. Wolfert, 68.
8. Rippe, 62–63.
9. Col Samuel Wilder, USA, "Employment of Tactical Air Power," briefing presented to the Tactical Air Conference conducted at Langley AFB, Va., 14–16 March 1989.
10. Ibid.
11. *Operation "OVERLORD": Report and Appreciation with Appendices* (London: Office of the War Cabinet, 30 July 1943), in Course DS 615, bk. 2, *Joint Specialty Program* (Maxwell AFB, Ala.: Air War College, 1988–1989), 11–37 & 38.
12. Rippe, 63.
13. Ibid.
14. Air Vice-Marshal J. R. Walker, "Air Power: Present and Future," *RUSI Journal*, June 1986, 15–16.
15. Maj J. B. A. Bailey, *Field Artillery and Firepower* (Oxford: Military Press, 1989), 65.
16. Ibid., 19.
17. Ibid., 65.
18. Konrad Alder, "The Airborne Threat to Mechanized Units," *Armada International* 9, no. 8 (December 1985): 120–22.
19. Rippe, 68.
20. Alder, 120.
21. Quoted in Harry G. Summers, Jr., *On Strategy: The Vietnam War in Context* (Carlisle Barracks, Pa.: Strategic Studies Institute, US Army War College, 1981), 25.
22. Harry I. Davis et al., "Tactical Air Warfare: Part I—Don't Take the Low Road," *Aerospace America*, August 1986, 18–22.
23. Ibid.
24. Gen Robert D. Russ, "No Sitting Ducks," *Air Force Magazine*, July 1988, 92–97.
25. Wolfert, 38–39.

## Chapter 6

# Conclusions and Recommendations

This chapter suggests the best ways to use information contained in this study. Before getting to the specifics, a note of caution is in order. This study does *not* conclude that major modifications in the structure of the tactical air control system (TACS) are necessary. At the tactical level of war, the procedures and principles of the TACS are sound. As a system for the management and execution of tactical air missions, the TACS accomplishes its mission in fine fashion. In other words, there is no problem with *how* the TACS does its business.

The conclusions of this study address operational art. This level of war overlays the functional level of the TACS. It exists at the echelon above the TACS, the level that decides *what* the actions of the TACS do to support the commander's overall plan.

This study has addressed many emotional issues. The note of caution above is intended to eliminate some of the emotion of these recommendations in hopes that the reader will keep it in mind when reading this chapter.

## A Common Perspective for the AirLand Battle

Chapter 1 examined the AirLand Battle doctrine of the US Army. This doctrine increases the importance of maneuver in the ground commander's combat operations. In addition, it extends the area of the battlefield that the ground commander must have an interest in and exert influence over. This area equates to a rear, deep, and close battle. Of greatest importance is the doctrinal shift instituted by AirLand Battle. Not only do the strategic and tactical levels of war now exist, but a new level—the operational level—serves as a bridge between the two. This change in orientation requires a change in *what* the air commander must accomplish to support this type of battle.

To change their orientation, both ground and air commanders must change their way of thinking about aircraft. For static warfare, it is acceptable to consider only the firepower portion of the tactical air equation, but maneuver warfare requires a different point of reference. If ground forces plan to maneuver, the maneuver aspects of aircraft must also be taken into consideration. Chapter 1 concluded that operational art requires

that aircraft be viewed not simply as flying artillery but as modern cavalry. Several examples of historical operations were given in chapter 1 to support this assertion. What, then, can be done with this new way of thinking about aircraft?

Chapter 1 established a common language that air and ground commanders can use to discuss their resources as operational art. Such a common reference has merit on and off the battlefield. Chapter 1 provided a new way for our military institutions to teach warfare and a new perspective for evaluating the historical roles of air power in campaigns. Instead of addressing air and ground campaigns separately, using this outlook they can discuss joint operations and teach integration of air and ground assets as operational art. This is the beauty of thinking of air power's contribution as an independent maneuver element within a single campaign plan, rather than the conventional view of a ground campaign supported by a separate air campaign. Using this perspective, military campaigns would not be studied in terms of what the air did or what the ground did, which is counterproductive. Our military schools would teach synergism—how a commander can accomplish more with air and ground forces than the sum of the individual parts. Chapter 1 provided such a reference system.

## Doctrine

The key to operational art is doctrine, and operational art is the key to doctrine. If doctrine does not address the operational level of war, it is not really doctrine. Chapter 2 offered a new definition of doctrine. Doctrine should be the officially sanctioned principles of what forces can best accomplish based on the lessons of history with latitude for adaptation to the combat environment. This concept implies that there may be situations in which less than the optimum force structure will be available. In these situations, the establishment of priorities is essential.

To illustrate this concept, chapter 2 discussed the development of tactical air doctrine. The lessons of air warfare in the twentieth century can be summarized in this fashion. The basic lesson learned in World War I was that aircraft could best support ground forces if they achieved air superiority first and then operated to isolate the battlefield or to pursue retreating ground forces. This lesson was relearned in World War II and was restated as the tactical air missions of air superiority, isolation of the battlefield, and close cooperation with ground forces.

Between the wars, air and ground commanders diverged from what they remembered as the lessons of World War I. The rapid advances in aircraft design and the pace of technological advances led to this divergence. Strategic bombardment advocates believed that technology had given the bomber de facto air superiority, yet ground commanders believed that air umbrellas could be placed over their ground forces to deny the enemy the

ability to attack those forces. Neither idea was correct, but the extreme polarity of these concepts illustrates how far apart air and ground commanders had drifted in their doctrinal beliefs. Only a disaster of the magnitude of Kasserine Pass in the North African campaign was sufficient to produce a tactical air doctrine based on cooperation of air and ground forces. Not only was cooperation essential, but so also was concentration of effort. For this reason, FM 100-20 emphasized a priority for accomplishing tactical air missions. Only through a prioritization of effort can sufficient mass be concentrated to accomplish the mission. Unfortunately, these lessons have again been forgotten.

## TAF Doctrine Tomorrow

Today the TAF is guided by a doctrine that asserts that the priority system of World War II is no longer valid and implies that all missions and air tasks can be accomplished simultaneously. Again, it is technology that has made this doctrine appear possible, though it is counter to the lessons of war. Technology has provided highly efficient $C^3I^2$ systems that act as force multipliers. These systems allow TAF assets to be allocated and apportioned to the different missions and air tasks at the command of the joint force commander. TAF doctrine stands alone in its belief that all tactical air missions can be accomplished simultaneously without the need for setting priorities.

Both Marine Corps and NATO doctrine reflect a prioritized hierarchy of missions similar to that contained in FM 100-20 of World War II vintage. These doctrines hold that to be true to the principle of war known as mass, air superiority must be the first priority of an air campaign. Air superiority is as essential to the ground commander as it is to the air commander. Unless air superiority is obtained and maintained, the success of any campaign is in serious jeopardy, according to both NATO and the Marine Corps.

This is not to say that prioritization of missions is essential at all levels of conflict. As shown below, air and land battles occur along a spectrum of intensity:

| AIR/GROUND | Heavy/Heavy (H/H) | Heavy/Light (H/L) | Light/Heavy (L/H) | Light/Light (L/L) |
|---|---|---|---|---|

At the light air but heavy ground intensity level (L/H), the air forces may be able to enter the close fight while fighting for air superiority and isolating the battlefield. In the heavy air and heavy ground end of the spectrum (H/L), the army will definitely need help, but the principle of mass may not allow the air forces to simultaneously fight all three battles. Doctrine should address all these situations individually so both the air and ground commanders can assess their options for the integration of effort appropriate to the level of conflict unique to that combat environment. The

basic issue is, Does integrating air forces into the fire-support plan accomplish synchronization with the commander's scheme of maneuver?

Fire support is a bottom-to-top allocation problem. Commanders from the platoon leader up to the corps commander nominate targets to be attacked. At each level, fire-support assets are available; but when there are not enough organic resources available at that level, the commander must go to the next higher level for help. The corps commander is the last level with organic resources—the corps artillery—to support the lower level, and is the focal point of this distribution effort.

Overlaid on this system is the air request net. Close air support is requested from the battalions up to the corps level. If the army can support the missions with organic resources, the air request is disapproved and artillery is used. The problem with this bottom-to-top system is a focus on *how* and *how many*, not on *what* must be accomplished by attacking these targets. The danger with this bottom-up system of allocation, apportionment, and distribution is the pressure to disperse effort over large areas and different times rather than concentrate assets at the decisive time and place.

This study favors a shift to a top-down system centered at the corps. The corps commander knows the scheme of maneuver and, with proper training, can issue mission-oriented orders for air to provide. This could be a penetration, an infiltration, or other form of maneuver discussed in chapter 1. Now, the air commander could force-package air forces to meet those mission requirements. This would result in changing the focus from *numbers of sorties* allocated to support the ground forces distributed to many subunits below the corps level, to measuring the merit of accomplishing *what* the corps commander needs to achieve in the scheme of maneuver. A top-down system emphasizes operational art. A bottom-up system matches targets to sorties and prevents air power from producing mass and from properly utilizing tactical air power's flexibility. It also moves the focus of TAF support from only the close battle to one that also encompasses the rear and deep battle.

## Emphasis on the Close Battle

Chapter 4 discussed the political realities of CAS. Since the 1947 National Security Act, the political leadership has focused on the Air Force's ability to conduct the close battle. This has led to the Air Force being forced to buy particular types of aircraft that are tied to one mission: close air support.

These civilian leaders believe that forcing the Air Force to buy close-air-support aircraft provides better support for ground forces. Contrary to their arguments, the lessons of war favor a flexible force structure that can provide mass against a prioritized effort. The search for a slow, survivable, and cheap aircraft to provide close air support is the *how* level of war carried

to extreme. In a heavy/heavy battle, the fact that TAC has nine of its 35 squadrons designed to provide CAS may lead to insufficient mass to provide air superiority and battlefield isolation for ground forces—missions that are essential for victory. The more flexible the TAF, the more the accomplishments across all levels of conflict. Flexibility allows air assets to be decisive when used at the proper time and place.

This emphasis on the close battle has also led to a doctrinal description of the battlefield that emphasizes linear relationships. The lines are designed to deconflict friendly fire from enemy fire but do nothing to aid integration. The highly fluid nature of modern AirLand Battle makes a linear deconfliction system no longer operative. Integration of air and ground forces requires a battlefield architecture based on operational art. Chapter 1 provided a way to integrate both air and ground forces in one scheme of maneuver. This allows both the Army and Air Force to be integrated within a common philosophical framework common to air and ground commands.

Finally, chapter 4 provided a new definition of CAS. The focus of support for ground forces must move away from the close battle. Within the framework established in chapter 1, air support is *what* the Army cannot do for itself. Air superiority and isolation of the battlefield are missions that the Army cannot accomplish with its force structure. The close battle is what the total force structure of the Army is focused to fight. Doctrinally, we need to return to FM 100-20 and its recognition that these missions (air superiority and isolation of the battlefield) are an air force's first and second priority missions if it is to support the ground forces effectively. This lesson of war has not been changed by advances in technology, but the threat has made the accomplishment of these missions a great deal harder than the World War II experience.

## Into the Future Jointly

The Army and Air Force are working these issues in the family of joint tactics manuals that they are developing. These manuals address the tactics necessary for the Army and Air Force to jointly cooperate in the prosecution of warfare. What is necessary is a doctrine to tie these joint tactics together. That doctrine is contained in FM 100-20.

Under FM 100-20, the Army and Air Force would jointly accomplish air superiority with a campaign using the aircraft and missile systems available to the joint services. Isolation of the battlefield would be accomplished through J-SAK and J-SEAD. Finally, close cooperation would use JAAT—augmenting the Army's rotary-wing assets with fixed-wing Air Force assets. This approach builds on the combined strengths of the Army and Air Force and provides the synergistic effects that are the true force multipliers and applies them at any level of conflict.

The force structure of the Army and Air Force has been established over years of political and combat experiences. The Army is now the expert in rotary-wing aircraft. The Air Force is the expert in fixed-wing combat aircraft. Any attempt to transfer assets between the services will require extensive retraining for the services. The joint system attempts to optimize the employment of Army and Air Force assets by the service with the most experience in that area. This is the logical approach to *who* should do these missions.

## Conclusions

Combat in the future will become more lethal and intense. Maneuver for ground forces will be essential for their survival in this environment. Maneuver will also be essential for the air forces involved. If aircraft and pilots are wasted in frontal assaults supporting the close battle, they will not be available to provide air superiority and isolation of the battlefield. In addition, the enemy's air forces will deprive our forces of the capacity to maneuver. The results will not be pretty.

This research project has attempted to offer a new perspective for looking at these problems. The battlefields of the next century will be too lethal for doctrinal mistakes and parochial attitudes. We may not be able to recover from a Kasserine Pass in World War III. For this reason, it is essential that we focus on *what* support for ground forces entails and discontinue our fascination with *how* that support is provided.



END